

ENTER .info's 8th ANNIVERSARY GIVEAWAY>>>>> OVER \$12,000 IN

for  **AMIGA** **USERS!**

 **.info** 

**FREE PRIZES!**  
**INCLUDING:**  
**VIDEO TOASTER**  
**DCTV \* ADPRO**  
**HARDWARE &**  
**SOFTWARE**  
**(see pg. 34)**

## **AMIGA PAINT PROGRAMS**

**PLUS:**  
**Chroma Key**  
**Novia 20i**  
**AdSpeed**  
**CD+G**  
**Ami-Back**  
**FlashBack**  
**Unix for**  
**Programmers**  
**And MORE!**



**#44**  
**NOVEMBER 1991**  
**U.S.A. \$3.95**  
**Canada \$4.50**  
**DISPLAY UNTIL NOV. 19**





## AMNIOS

### Alive and Killing!

"Put simply, AMNIOS is the best shoot-'em-up that has been released for a long time".

— Amiga Action — 93%

Penetrate the living hell that is **Amnios**. Counter your comparatively diminutive ship against the merciless might of **ten living, breathing planets** in an audacious endeavour to rescue imprisoned members of your own persuasion.

Pick up indigenous DNA and utilise it to fabricate enhanced weaponry to abet your pestilential quest.

**Aw, forget the Bull! Just get in there and save the World!**

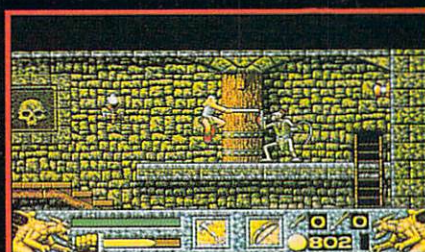
Amiga Screen Shots

PSYGNOSIS, 29 ST. MARY'S CT., BROOKLINE, MA 02146  
TEL: (617) 731-3553 FAX: (617) 731-8379

Circle #115 on the Reader Service Card



# BARBARIAN II



## BARBARIAN II

Necron's back in town and he wants revenge. Only you – in the guise of Hegor the Barbarian – have the courage, strength and stupidity to face the challenge:

It's time once again to don your dented helmet, tie your sweaty breechcloth, sharpen your rusting sword and move your big feet in the direction of danger.

Forests, caves, dungeons, castles and temples await your barbaric exploration, each is infested with deadly inhabitants and devious traps ready to terminate your lowbrow activities.

Featuring 2,000 frames of sprite animation, 32 colours on-screen, parallax scrolling, 6 levels of continuous arcade/adventure action, over 1 megabyte of fully-animated sprites, 50 divergent enemies, Magic & Health Potions to help you on your quest and a plethora of unique weapons to find and use. **Barbarian II** is:

*The ultimate in loincloth entertainment.*

*Screen Shots from the Amiga version*

**SEEING IS BELIEVING**

### PSYGNOSIS

29 Saint Mary's Court,  
Brookline, MA 02146  
Telephone: (617) 731-3553  
Fax: (617) 731-8379







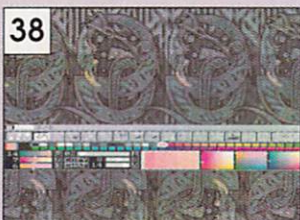
# Issue #44, November 1991

**About the cover:** This issue marks .info's eighth birthday, which makes us one of the oldest computer magazines around, and the oldest surviving Amiga magazine. To celebrate, we're giving away over \$12,000 worth of cool Amiga software and hardware. .info wishes to thank the many generous companies who donated products for our birthday bash. See page 34 for details. The cover illustration is a 1536 X 960 24-bit rendered with Newtek's *Lightwave 3D*. .info is produced and managed entirely with Amigas running off-the-shelf consumer software and peripherals.

## CONTENTS CONTENTS CONTENTS CONTENTS CONTENTS

### ProVisions

38



#### ▲ Graphics page 38

Brad Schenck presents a RoundUp of the top Amiga native mode paint programs.

#### ◆ MultiMedia page 43

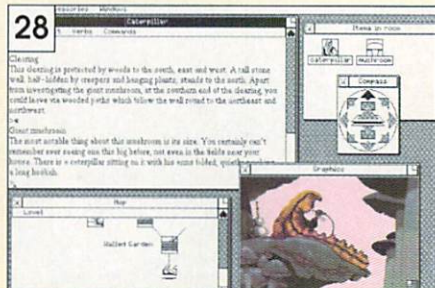
Harv Laser's Rockin' and Boppin' to CD+G on CDTV. (With discography!)

#### ● Audio page 46

Bob Lindstrom examines the topic of how to add music to multimedia.

#### ■ Video page 48

OJ Sands III puts himself in the picture with MicroSearch's impressive Chromakey.



### Columns

#### 20 Hardware

Mort Kvelson packs an A500 with ICD's internal peripherals.

#### 23 Public Domain

Jeff Lowenthal looks at programs from GENie and CranWare.

#### 24 Tir Na Nog

Brad Schenck explains the creative process.

#### 28 CyberPlay

Tom reviews 4 new games, then twiddles his electronic thumbs.

#### 36 Productivity

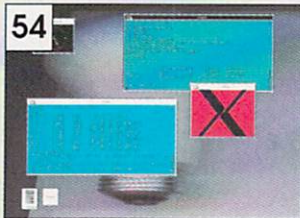
Jim Meyer backs up with Ami-Back and Flashback.

#### 52 DevCon Report

Mark visits the Coors Brewery and the Amiga DevCon.

## .info technical support

54



#### 54 UNIX: Is It For You?

Daniel Barrett finishes his discussion with Part II: For the Programmer.

#### 58 Quarterback Tools

David Martin reviews this Amiga utility program.

#### 60 Point / Counterpoint

Nick Sullivan and Chris Zamara debate the relative virtues of the Workbench and CLI.

#### 62 Checking Out Programs

Jim Butterfield warns that Hallowe'en and Christmas may be the same thing.

## DEPARTMENTS

6 .info Monitor

8 Mail

10 New Products

18 News & Views

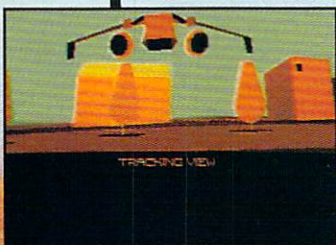
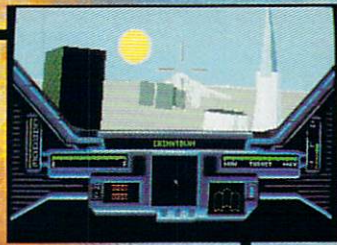
18 .info Update

19 The Rumor Mill

65 Advertisers' Index



# EXTENDED FORECAST FOR SAN FRANCISCO. MOSTLY CLOUDY WITH A SLIM CHANCE OF SURVIVAL.



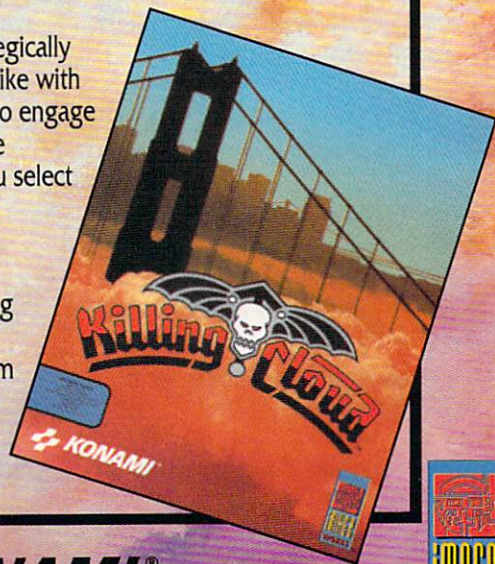
The outlook for the City by the Bay in the 21st Century is grim. A toxic cloud has billowed into town, smothering half the inhabitants. You're a hard-nosed cop called upon to soar through the cloud choked streets in your advanced XB500 hoverbike and defend the dwindling population. Especially now that the cloud provides a sinister smoke screen for the evil doings of a rabid pack of criminals, The Black Angels. Your mission is to net the ringleaders and solve the mystery of the cloud that kills.

Receive each of ten daring assignments in the Briefing Room and strategically plant nets and robotic holding units throughout the city. Stoke your hoverbike with machine gun ammo, cannon rounds and a reserve fuel tank, then prepare to engage enemies in dogfights, seize robots and intercept enemy attacks. Interrogate captured suspects for key information. Exhilarating flight simulation lets you select flight or hover mode, forward and reverse thrust, refuel, radar detection, weaponry, multiple views and more. Navigate your way through an urban obstacle course of 240 authentically scaled San Francisco buildings and landmarks. To survive, you'll have to be skilled at piloting, combat, mapping strategies, and sleuthing.

It's time now to don your foul weather gear and shield the citizens from the suffocating smog. See for yourself why the Killing Cloud will take your breath away.

Available Fall 1991 for MS-DOS and Amiga.

Circle #104 on the Reader Service Card



©1990 Vektor Graphics Ltd.  
©1991 Mirrorsoft Ltd. The Killing Cloud™ and Image Works™ are trademarks of Mirrorsoft Ltd.  
Konami® is a registered trademark of Konami Co., Ltd.  
©1991 Konami, Inc. (708) 215-5111. All Rights Reserved.

**KONAMI**





## **CHANGING TIMES**

**W**e've been quietly celebrating our eighth anniversary around the offices and doing a little reminiscing about what the world was like eight years ago. *.info* was called *The Cyborg Gazette*, later changed to *INFO-64*. There have been a few changes since then, some significant, some not. Some relevant, some not. Then again, some things haven't changed at all. We thought we'd share some of our lunch-table observations with you.

### **Then:**

Ronald Reagan was President and George Bush was Vice President.

Leonid Brezhnev ruled the Soviet Union.

The Amiga hadn't yet been born, and the Commodore 64 was about to become the first machine to bring real computing to the masses at an affordable price.

The U. S. was in the depths of a recession, but things were starting to look up.

Computers were single-tasking.

64K was more memory than anyone could possibly use.

No one could possibly want more than 16 colors.

Software came on cassette tapes and cartridges.

Multimedia meant a slide projector, a microphone, and a long wooden pointer.

Desktop Publishing meant a typewriter and a copy machine.

Spreadsheet meant putting a cloth covering on a bed.

Marketing meant going to the grocery store to pick up a few things.

Telemarketing meant selling telephones, something Ma Bell was fighting tooth and nail.

Listening to music involved putting a vinyl record on a turntable and then scraping it with a needle.

Watching TV involved deciding whether to watch ABC, CBS, NBC, or PBS and then adjusting the antenna to get the best reception.

Computer graphics meant a few semi-recognizable blobs on the screen.

### **Now:**

George Bush is President and Dan Quayle is Vice President.

There is no Soviet Union.

The Amiga is five years old, and IBM has brought boring computing to the masses at an exorbitant price.

The U. S. is in the depths of a recession, but things are starting to look up.

Computers are multitasking, except for IBM and Apple.

64 gigabytes isn't enough memory.

No one could possibly want more than 16 million colors.

Software comes on floppy disks and CDs.

Multimedia means whatever you want it to mean.

Desktop Publishing means a computer, page layout software, a laser printer, and a copy machine.

Spreadsheet means playing what-if with the Federal Deficit.

Marketing means having a bunch of number-crunchers decide what you're going to buy at the grocery.

Telemarketing means having a recording call while you're eating dinner and try to sell you plastic siding for your house.

Listening to music involves putting a shiny plastic disc in your portable CD player and jogging through traffic.

Watching TV involves deciding whether to watch TBS, TNT, HBO, ESPN, AMC, USA, CNN, or CNBC and then calling the cable company to complain about the fuzzy reception.

Computer graphics means raytracing, digitizing, and image processing.

## **.info Publications**

**Publisher & Editor**  
Benn Dunnington

**Managing Editor**  
Mark R. Brown

**Senior Editor**  
Tom Malcom

**Technical Editors**  
Nick Sullivan  
Chris Zamara

### **Contributing Editors**

Greg Conley  
Mort Kevelson  
Bob Lindstrom  
Harv Laser  
Jeff Lowenthal  
Jim Meyer  
Oran J. Sands III  
Brad Schenck

**Art & Production**  
Megan Ward  
Tony Bodensteiner

**Data Manager**  
Judith Kilbury-Cobb

**Advertising Director**  
Anna Folkers

**Marketing Director**  
Joy E. Schmelzer

**Advertising Sales** (319) 338-3620  
**Facsimile** (319) 338-0897  
**Subscriptions** (319) 338-0703

COPYRIGHT © 1991  
BY .info PUBLICATIONS  
ALL RIGHTS RESERVED

.info (ISSN 08975868) is published monthly except bi-monthly in August-September by .info Publications, 705 Highway 1 West, Iowa City, IA 52246. US subscription rate is \$26.00, one year; \$47.50, two years; \$65.00, three years. Canada/Mexico rates in US funds are \$34.00, one year; \$63.50, two years; \$89.00, three years. Foreign surface rate is \$50.00 (US funds), one year. Second-class postage paid at Iowa City, IA and at additional mailing office. POSTMASTER: Send address changes to .info, 705 Highway One, Iowa City, IA 52246.

.info is an independent journal not connected with Commodore Business Machines, Inc. National and worldwide distribution by Kable News Co., New York, NY. Entire contents copyright 1991 by .info Publications, Iowa City, IA. No part of this publication may be printed or otherwise reproduced without written permission from the publisher. .info makes every effort to assure the accuracy of articles, stories, and reviews published in this magazine. .info assumes no responsibility for damages due to errors or omissions.



Sullivan Bluth Presents

# SPACE ACE II: BORF'S REVENGE™

Sullivan Bluth Presents  
**SPACE ACE II:  
BORF'S REVENGE™**



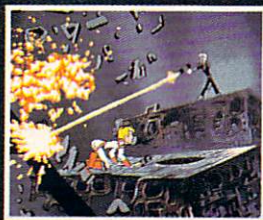
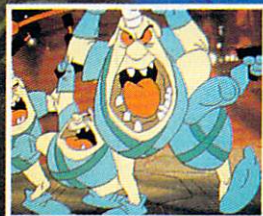
## **BORF'S BACK WITH A VENGEANCE...**

Just when you thought Earth was safe from the evil Commander Borf, his little henchmen, The Goons, have blasted Borf with the Infanto Ray a second time returning him to his full age - and evil. Lead Ace through battles with the goons and Borf's other allies until you encounter the evil Commander himself in the ultimate battle for the universe.

Space Ace II: Borf's Revenge brings the classical animation style of Don Bluth to the computer format featuring over five megabytes of full screen animation, digitized sound and new animations not included on the original Space Ace laser disc.

Available for IBM PC™ and Compatibles, Amiga™, Atari ST™ and Macintosh®.

IBM VGA Screens Shown



**READYSOFT**

ReadySoft Incorporated  
30 Wertheim Court, Suite 2  
Richmond Hill, Ontario, Canada L4B 1B9  
Tel: (416) 731-4175 Fax: (416) 764-8867

"Space Ace" is a registered trademark of Bluth Group, Ltd. ©1989. "Space Ace II: Borf's Revenge" is a trademark owned by Sullivan Bluth Interactive Media, Inc. - ©1991 Sullivan Bluth Interactive Media, Inc.; used under license from Sullivan Bluth Interactive Media, Inc. Character Designs ©1983 Don Bluth; ©1989 all audio, visuals and concept - Sullivan Bluth Interactive Media, Inc. ALL RIGHTS RESERVED; Programming ©1991 ReadySoft Incorporated.

Amiga, Atari ST and IBM are trademarks respectively of Commodore International, Atari Corporation and International Business Machines. Macintosh is a registered trademark of Apple Computer Inc.

Circle #106 on the Reader Service Card



# R E A D E R M A I L

## .info Mail Boxes

### Our U.S. Mail address is:

.info Reader Mail,  
705 Highway 1 West  
Iowa City, IA 52246

### FAX us at 319-338-0897

### Send EMail to the editors at:

COMPUSERVE	70215,1034
PORTAL	INFOMAG
GENie	INFO.MAG
BIX	INFO.MAG
InterNet	infomag@cup.portal.com

Please do not use our EMail addresses to inquire about subscription problems. Mail sub problems and address changes to the Subscription Department at the above U.S. Mail address.

**A**fter reading the article *Is Amiga DTP a Real Alternative?* in the Aug/Sept issue, I wanted to respond from an Amiga point of view. I am not going to condemn the Mac or IBM, I just want a chance to say that the Amiga is a good choice for DTP.

The screen shots of *FrameMaker* and *PageMaker 4.0* look great. Obviously, the reviewer spent some time to create the documents shown. Comparing these to the three Amiga "heavyweight" contenders, it looks like they did not survive the fight. Users of *PageStream*, *ProPage*, or *Saxon* would be embarrassed if their pages actually looked like the samples shown.

In my opinion, the Amiga lacks hardly anything except an expensive price tag. According to the article, Amiga DTP users lack fonts and polish. *PageStream 2.1* offers support for IBM Type 1 and Computer-Intelligent font format fonts, and Soft-Logik is coming out with a PostScript type-face library, including clip-art.

The lack of interchangeable wordprocessing files is also a problem for most Mac and IBM users. Amiga DTP software does support a variety of picture formats. For example, *PageStream* supports all of them except for HPGL and CGM. Most people use *The Art Department Professional* to convert graphics into a format their DTP software supports.

You want polish? Call up an Amiga manufacturer and ask for brochures, literature,

copies of reviews, or even press releases. I can guarantee that all of them will send you colorful, professional brochures. They may have smaller budgets than their Mac and IBM counterparts, but who says you have to spend a lot of money to be professional?

- Ellen Kazmaier, Soft-Logik Publishing

**T**here is one desktop publishing program for the Amiga that will handle long documents well. The lists of tasks for which the Amiga falls 'miserably short' on page 28 of Daryell Sipper's article reads like a list of the features of *AmigaTeX*. *AmigaTeX* handles cross-references, tables of contents, lists of figures and illustrations, tables, paragraph numbering, segmented documents, illustration linking, scientific equations, page numbering options, global changes, and much more. Any custom extensions can be coded in the powerful macro language, providing support for custom documents such as catalogs or databases. And this is only a partial list of features. On the other hand, *AmigaTeX* is not an interactive point-and-shoot program, and it is quite a bit more complex than any other Amiga publishing program. Not every user needs all of these features, and the simpler interface provided by other desktop publishing programs can be seductive. Nonetheless, for complicated documents *AmigaTeX* is an alternative that should be explored.

If any of your readers are interested, I would be happy to mail them some literature and a free demo disk if they write me at Radical Eye Software, Box 2081, Stanford, CA 94309.

- Tomas Rokicki, Radical Eye Software

*The two letters above are only a sample of the mail we received about Daryell Sipper's article, and there were many more. We chose these two because they're from people from companies producing Amiga DTP software and we thought they deserved a chance to reply.*

- Mark & Benn

**I** have a XT Bridgeboard installed in my A2000. I'm looking to upgrade my Bridgeboard to a AT. I have noticed that various companies offer to

upgrade a A1000/A500 to a A2000/A2500. Is there a company(ies) which offer the same upgrade to the Bridgeboards? If so, could you enlighten me?

In closing, I applaud your magazine for the "NO BULL" reporting your staff provides to its readers. The only request I have is that you take productivity software (wordprocessors, spreadsheets etc.) and do some comparisons and "NO BULL" reporting on them.

- Mo Morrison, CompuServe

*We have a regular Productivity column, but Jim has spent most of his space so far on DTP programs. We do, however, plan to do wordprocessing, database, and spreadsheet programs in the future. Stay tuned. We know of no Bridgeboard exchange program. You should, however, be able to sell the XT board and apply the cash towards an AT board. I suggest your local BBS or user group newsletter. Good luck!*

- Mark & Benn

**I** hate going into my favorite software store these days. The first thing I do is go to the IBM/PC shelves. I can usually pick out a dozen programs I'd like to have. I then go to the Amiga section and see if these are available for my computer. 90% of the time they're not. I'd like to see software companies even the score between IBM/PC and the Amiga. Amiga is the better computer, so why not give it the better selections? Concerned,

- Eric J. Boerner

Free Mail, Operation Provide Comfort.

*As your return address indicates a military posting somewhere in the Middle East, we can only assume that the desert sun was too much for you. The Amiga may indeed be the better computer, but software developers, unlike the military, don't have truckloads of money shipped to them whenever they want. (A possible exception to this is Bill Gates at Microsoft.) They're in the business to make money, and nearly all of that cash comes from IBM sales. If you really want help in the effort to have more IBM titles converted for your Amiga, write to the publishers. They do read their mail.*

- Mark & Benn



**A QUEST BEYOND BELIEF... A WORLD BEYOND IMAGINATION!**

# KNIGHTS OF THE CRYSTALLION

ORODRID is a city rich in culture. A place of music, art, poetry, politics and religion. A civilization thriving on wealth and power. A CITY MADE OF BONE ... The journey through the skull or TSIMIT is a dangerous one, but success will bring you great power and position in Orodrid society ...

**AS YOU ENTER THE WORLD OF THE CRYSTALLION.**



**THE BOSU MIND CHALLENGE**  
A game of strategy, philosophy and psychological agility. Master the art of the Bosu or give up all hope of reaching your Crystallion.

## A DARK UNDERWORLD



Overcome the eerie darkness of the four VEILS of the TSIMIT, carefully searching the maze for the valuable crystals that will allow you to journey onwards and rise in the ranks of Orodrid society.

## To Order:

See your local retailer or call 1-800-245-7744

- HAM MODE RAY TRACED GRAPHICS.
- ORIGINAL STEREO SOUNDTRACK - includes non-repeating music generator.
- DIGITIZED VISUAL AND SOUND EFFECTS.



**TRICKS OF THE TRADE**  
Using your trading ability, generate the currency required to pay the keepers, and to fortify yourself on the long journey through the TSIMIT. But beware, compete too ruthlessly in the HARESH and you may find yourself isolated when YOU ask for assistance.

## THE GIFT OF SECOND SIGHT



Sharpen your telepathic senses with meditation, concentration and memory exercises in the intricate card game Dekela.

INCLUDES  
AUDIO CASSETTE  
& POETRY BOOK  
FROM THE  
CREATOR OF  
KNIGHTS OF THE  
CRYSTALLION  
BILL WILLIAMS

**AVAILABLE ONLY ON  
AMIGA**

Circle #165 on the Reader Service Card

© Bill Williams 1991. All rights reserved.  
Licensed to U.S. Gold Ltd.

Illustration: Peter Andrew Jones.  
Copyright: Solarwind Limited.

**U.S. GOLD**



# NEW PRODUCTS



Skimming through the Grand Canyon with Natural Graphics' *Scenery Animator*

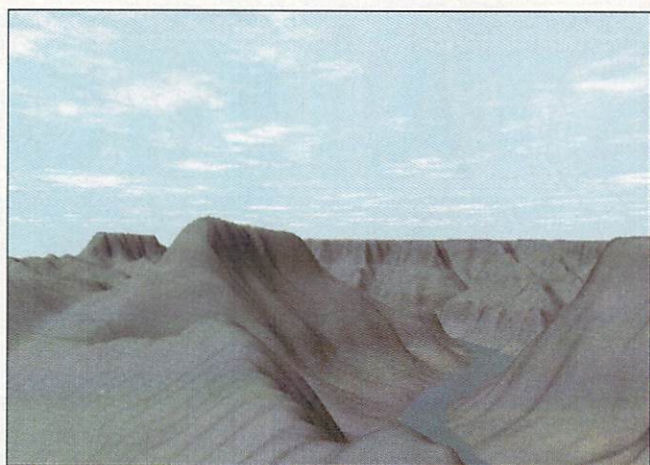


image can be compressed from about 1.1MB down to less than 30K without significant degradation of the image. And it only takes about 35 seconds to do it on an A3000. The nifty part of this is that *TAD-Pro* can perform image processing on the compressed files as they're loaded. For more information, contact ASDG at 925 Stewart Street, Madison, WI 53713. 608-273-6585. RS #204.

## DP IV

We already previewed **Deluxe Paint IV** back in the June issue, but now we've gotten our hands on the release version. There have been a few changes from the alpha we told you about. The most notable had us doing backflips down the hall - you can now double-click a filename to load a picture! That has always been one of the biggest gripes about *DPaint*, and EA has listened! To summarize the major new features: HAM support, more types of fill options, a mix mode, completely reworked palette and range control (including the ability to save and load palettes and color sets independently of pictures), ordered dithering, brush morphing, a light table mode, translucency and color processing functions, and enough other stuff to keep us glued to our computers for months. A point that needs to be made here is that nearly all of the functions and tools can be used in any mode, including HAM, though some work better in some modes than others. And *DPaint IV* is intelligent about what tools can be used in what combinations, ghosting inappropriate selections. Switching screen resolutions and number of colors is smooth and seamless. Overall, it looks like *DPaint IV* is still the definitive paint program not just for the Amiga, but for any computer. Price is \$179. Owners of *DPaint III* can upgrade for \$67, and if you're still back on *DPaint II*, you can upgrade for \$97. Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404. 415-571-7171. RS #205.

## NEW GVP

Great Valley Products has produced a new 24-bit graphics board that

## FLY-BY

Brett Casebolt, of *Scene Generator* fame, has finished a new fractal landscape generation package called **Scenery Animator**. As the title implies, the primary function is to create animated 3D fly-throughs of both real and imaginary landscapes, though it can also be used to make single images. The software takes a key-frame approach to animation, letting you graphically plot out the course your fly-through is to take and letting you specify the number of frames to generate. To save you some time, there's a preview mode so you can check your flight path for accuracy before you start rendering. *Scenery Animator* will display its results in all Amiga resolutions, has direct support for DCTV, and will also produce 24-bit IFF files. The animations are in Anim5 format and can also be saved off as individual frames. The package includes real-world digital elevation data for parts of the Grand Canyon, Yosemite, High Sierras, and Lake Tahoe, with more to be released in the future. There are two versions of *Scenery Animator* in the package, one for a stock 68000 machine and another that requires a 68020 or '030, a math coprocessor, and a minimum of 2 megs of RAM to run. *Scenery Animator* will accept files from Virtual Reality's *VistaPro* and MegageM's *ScenePro*. \$99.95 from Natural Graphics, PO Box 1963, Rocklin, CA 95677. 916-624-1436. RS #201.

## ASDG

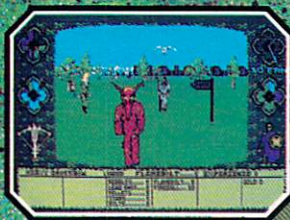
There are a couple of new developments from ASDG. First, they're shipping an entirely new, ground-up rewrite of their software for the Sharp JX300, JX450, and JX600 color scanners. **Professional ScanLab II** is a hardware/software combination that gives WYSIWYG control over the scanning process. Consisting of a GPIB board, connecting cable, and two software drivers, the package offers both stand-alone control of the Sharp scanners or control from within *The Art Department Professional*. The WYSIWYG control means that using the scanners for video and publishing is far easier than before; the scanned area can be specified in either pixels or inches and, even better, the image aspect can be locked in to fit a particular space. If you've ever used a color scanner, you know the resulting files are enormous and it's very easy to run out of memory for the scan. ASDG has overcome this problem by allowing direct-to-disk scans. It's all 2.0-compatible and the system (excluding the scanner itself) retails for \$800. If you already have one of ASDG's GPIB boards, the software is available separately for \$300.

In a separate, but somewhat related development, ASDG is incorporating JPEG image compression into *The Art Department Professional* as a standard feature. Widely used on IBM and Macs, the file compression can achieve some astonishing results. For example, an overscan, 24-bit

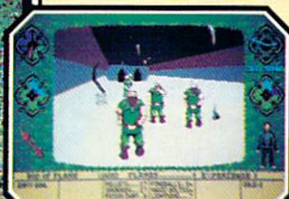


# DARE YOU LET THE...

## Sleeping Gods Live



Created and then abandoned by the Old Gods, Tessera is blighted by plague, and the vicious rule of the Archmage and his henchmen. A dying priest of the Kobbold Old Way bequeaths a sacred quest: to find and wake N'Gnir, an Old God rumoured to slumber in one of the farthest-flung of Tessera's eight kingdoms. Battle your way through 94 landscapes, fending off demons and bandits, befriending princes and hermits, winning knowledge and strength as you travel. Arm yourself with slings and crossbows, protect yourself with camouflage and dragonskin and find the Ring of Annihilation.



- ◆ 4 Dimensional role playing action
- ◆ Flight simulator technology combined with solid hand drawn graphics
- ◆ Free movement with 1st person perspective view
- ◆ Depth of an adventure with intuitive mouse control
- ◆ 3 Dimensional sound effects
- ◆ Wide variety of weapons, armour and equipment to build up your character
- ◆ Hundreds of independently controlled characters to fight or befriend
- ◆ Game-save facility to continue your quest at a later date
- ◆ Ability to install on hard disk

Available on: Commodore Amiga™, Atari ST, and IBM PC and Compatibles.

Pack contains:-

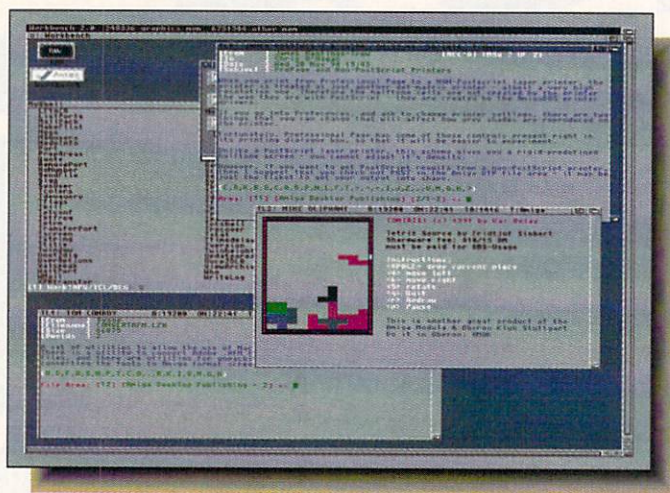
- ◆ Rebel Pamphlet & Poster. ◆ Comprehensive Playing Manual



Screenshots taken from Commodore Amiga version.  
Under Licence from the Award Winning Oxford  
Digital Enterprises Team. Copyright 1991



# NEW PRODUCTS



Set up your own bulletin board with **DLG BBS**

does much more than just display a 24-bit image onscreen. The **Impact Vision 24** has a built-in frame buffer, flicker fixer, and digital keyer, along with genlocks for both composite and analog RGB video. The board comes with a 2D paint program and a 3D rendering package as well. The **Impact Vision 24** is specifically designed for the A3000 and requires a small adapter board to plug into an A2000. Price is \$2199.00. If you want to add sound and music to your video, GVP can help you out there, too. The **Digital Sound Studio** (\$125) plugs into your parallel port and, via a standard RCA cable, will let you digitize and edit 8-bit sound samples with an wide array of tools, including fade-in and -out. 600 Clark Avenue, King of Prussia, PA 19406. 215-337-8770. RS #206.

## DLG BBS

**W**e've heard some whining about there not being a decent, definitive Amiga-specific bulletin board system, but **DLG Professional** may put an end to it. The press release has seven columns of features, printed in tiny type, and that still doesn't cover it all. Among the more prominent: multiple lines limited only by the number of serial ports you have installed; up to 65000 users at 255 different levels; 9999 separate file areas and a like number of message areas; online help; ANSI support; and smart menus that only show options that are currently valid. The mail and file systems appear comparable to

those of the big commercial systems. The file system even has an option to show the contents of Zip, Arc, Lharc, and Zoo files. The system supports FidoNet and UUCP/UseNet. And of course, it has multi-user realtime conferencing. There are all sorts of sysop conveniences to make living with your BBS easier. One more point that needs to be made about **DLG Professional** is that it is Amiga from the ground up and will run on any Amiga model, even a 512K 500. Of course, you'll need a little more horsepower if you're planning to start your own version of CompuServe. The program itself is built around the AmigaDOS Shell, which means that standard CLI-based programs can be used directly in your BBS setup. When you couple that with the full ARExx support, it makes an extremely powerful and expandable system. Cost of this powerhouse is \$199 and it's from **TelePro Technologies**, 20-1524 Rayner Avenue, Saskatoon, SK Canada S7N 1Y1. 306-665-3811. RS #203.

## KEEPING UP

**A**fter several years of not seeing any Amiga PIMs (Personal Information Managers), those oh-so-handy computer Rolodexes and calendars that make life simpler, they've started popping up again. The latest is **Secretary**, a title that pretty much says it all. The program, which opens on a hi-res screen, includes a month-at-a-glance calendar and to-do list (unfortunately for those of us who are professional

procrastinators, the list keeps moving forward automatically until the items are completed or manually removed). There's also an address book that will accept up to five addresses and phone numbers for each person. Your book can be searched in several ways, and will do those searches based on partial strings. It will, of course, generate mailing labels and phone lists in either hardcopy or clipboard file format. \$49.95 from **Expert Services**, 5912 Centennial Circle, Florence, KY 41042. 606-371-9690. RS #207.

## DATAAREXX

**O**ne of the more interesting new products we've heard about lately is the **ARExxDB Records Manager** from **JMH Software of Minnesota**. The program is essentially a database manager specifically designed for ARExx. It will handle multiple open files, variable length records, unlimited indexes, record and file locking, and more functions than you can shake a hot address field at. It also uses dynamic RAM caching to make accessing your data as fast as possible. What makes this product unusual is that since it is ARExx-based, it can be customized and tailored to your own purposes using ARExx scripts and can also be accessed from any other program via ARExx. JMH also has a companion data-entry product in development. It's called - what else? - **Windexx**. Price for **ARExxDB Records Manager** is \$125. 7200 Hemlock Lane, Maple Grove, MN 55369. 612-424-5464. RS #208.

## ENTHRONED

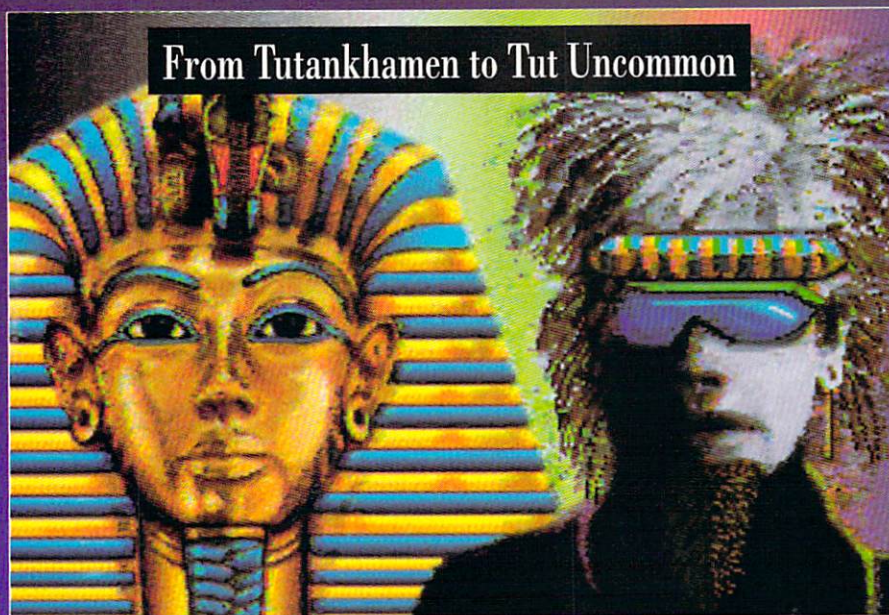
**O**ne of the first high-power UNIX programs we've seen ported to the Amiga 3000UX is **Empress**, a relational database manager with network and multi-user support. It has object-oriented capability and since it's distributed, each user can insert, delete, or otherwise alter records in multiple databases with location independence. It has ANSI standard SQL, an RDBMS kernel that can be called from C, a full-function report writer, and a 4GL applications generator with XWindows support. The interesting thing to note, and one of the



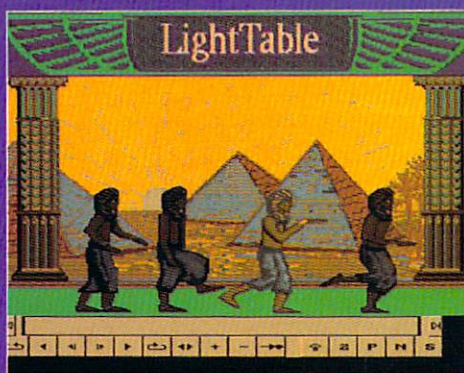
# DELUXEPAINT IV

## KING OF PAINT AND ANIMATION

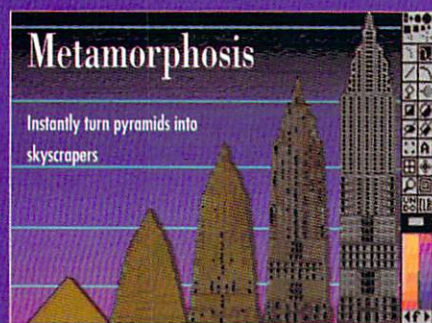
There's a reason DeluxePaint® has been the leading Paint and Animation program throughout the evolution of the Amiga®. We've consistently overcome obstacles as large as pyramids to bring you the most intuitive, up-to-date graphics programs available. That's why our list of satisfied customers is as long as the Nile. So, forget about using those other programs with the hieroglyphic interfaces and enter the next era of paint and animation with DeluxePaint IV.



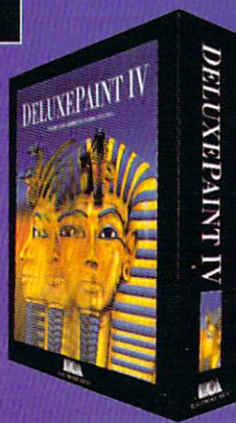
**Powerful New Tools**  
Everything needed to transport you from the Cradle of Civilization into the Modern Age, including Tinting, Translucency and Anti-Aliasing.



**Superior LightTable**  
You'll be doing the "Tut two-step" when you see how easy it is to create animations. Now, see through your current frame to four additional frames — in color!



**Easy Metamorphosis**  
Watch evolution unfold. Instantly animate the shape and image of one brush into any other brush.



### DeluxePaint IV features:

- Paint AND Animation in HAM using all 4096 colors
- Improved gradients are now smoother, more versatile and easier to define
- All new Color Mixer makes creating and choosing colors a snap
- New Animation Control Panel with VCR-style interface means no more searching through menus for the animation controls you need. Now, just point and click.
- Enhanced Stencils give you greater control over image processing and image manipulation

**Plus all the Award-winning features you've come to expect from DeluxePaint:**

- AnimPaint™ — Creating animations is as easy as pressing one key to record your paint strokes and another to play them back
- Instant 3-D perspective
- Direct Overscan support for video applications
- Split screen Magnification with variable Zoom
- Animated brushes to simplify cel animation
- Move Requestor lets you automatically animate brushes in full 3-D
- Extensive keyboard equivalents help advanced users work more efficiently

For more information about DeluxePaint IV and our special upgrade offer, call 800-245-4525 ANYTIME!

And You Thought Tut was Ancient Art



ELECTRONIC ARTS®

Amiga is a registered trademark of Commodore-Amiga, Inc. All other trademarks are trademarks or registered trademarks of Electronic Arts.

Circle #112 on the Reader Service Card



# NEW PRODUCTS

Visiting a Chinese restaurant and learning to pronounce things correctly with **Audio Gallery**



reasons this is an important release for the Amiga version of UNIX, is that since *Empress* has the ability to store arbitrary sequences of data values of any length, which includes sound and graphic data, a natural for the Amiga. Prices (hold onto your wallets, folks!) start at \$1400 for just the RDBMS up to \$4200 for the full-boat version with 4GL. *Empress Software*, 6401 Golden Triangle Drive, Greenbelt, MD 20770. 301-220-1919. RS #209.

## REPEAT AFTER ME

If you're contemplating a visit to Beijing or Xianggang (Hong Kong), you will most likely want to check out **Audio Gallery**, a computerized Chinese language tutor. The version we have is for Mandarin Chinese and it employs a common-sense, point-and-hear approach to learning a language. While it won't teach you grammar (the manual does include sections on putting together the words and phrases you'll learn), it will teach you the vocabulary and pronunciation in a particularly painless way. The main menu screen lets you choose from various topics, such as going to a restaurant, household objects, relatives and other people, locations in China, and so on. Once you enter a section, a scene comes up filled with numbered objects that you can click on to hear a pronunciation. This is where the Amiga really shines as a teacher; the voice you hear is digitized and the pronunciations are crystal

clear. They're also repeatable, so you can hear it, say it, and repeat the process until you get it right. Being able to click on a particular object also makes it easy to learn what you're most interested in or what you most need to know. All in all, a very sensible system for learning a language. Versions of the *Audio Gallery* are also available for Spanish and German, with future editions to cover French, Italian, Russian, Korean, Japanese, English, and even Signing. Prices for European languages are \$89.95, while the Oriental languages go for \$129.95. *Fairbrothers*, 5054 S. 22nd Street, Arlington, VA 22206. 703-820-1954. RS #202

## NEW CAD

If you use CAD software, you're certainly aware of *X-CAD*. The publisher, *Applied Vector Technology*, has now come out with three new *X-CAD* products. **X-CAD 2000** (\$199) is designed for the beginning CAD user and automates the process of creating mechanical, architectural, engineering, and other types of drawings. The resulting designs can then be projected or spun in 3D space and seen in orthographic, isometric, or perspective views. **X-CAD 3000** (\$599) is a much more sophisticated package which, besides the usual CAD functions, offers graphics tablet support, automatic hidden line removal, and 3D surfacing commands. Finally, **X-CAD 3D** (\$499) is for those who already

use *X-CAD Designer* and/or *X-CAD Professional* and need to add 3D modelling to their work. Point West, 1042 Uxbridge Road, Hayes, Middlesex, England UB4 0RJ. 081-573-9694. RS #212.

## ANIMATING HAM-E

If you've been wanting to do animation on your *HAM-E* video display, now you can. *Holosoftware Technologies* has released **Ham-E Workshop**, a full-featured paint and animation program based on *Holosoftware's Graphics Workshop* and designed exclusively for use with *Ham-E*. In addition to all sorts of paint functions, such as color filtration, brushes that can be rippled, rolled, draped over images, and brush area masking, it supports two types of animation. Cell animation features variable movepaths, auto-animation, and an infinite number of frames that can be rotated, rolled, spun, and resized. The Page animation mode allows the user to create choreographed multi-brush animations and it also has the ability to change palettes on each page. \$60. 1637 E. Valley Parkway, Suite 172, Escondido, CA 92027. 619-747-0663. RS #213.

## MAKING VIDEO

The *Disc Company* has a couple of things to make life with your camcorder and VCR a little easier and a lot more fun. **AlterImage Video F/X** is a video titling package that supplies fonts, clipart, and functions for putting them on the screen, moving them around, and adding special effects. It also includes drawing tools for putting borders, boxes, and the like on top of your video. The company also has a companion genlock, which is, of course, necessary for combining the video and computer graphics. This **AlterImage Genlock** can be directly controlled by the titling software, making for a complete package. Price of the software is \$199.95 and the genlock is \$249.95. A bundled package with the software, genlock, and a training videotape is also available for \$399.95. 11040 Santa Monica Blvd., Suite 300, Los Angeles, CA 90025. 213-478-6767. RS #214.



# NEW PRODUCTS

## ARTWORK

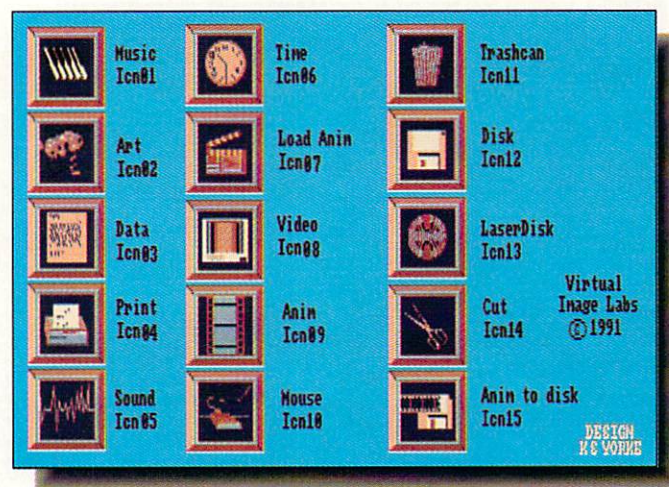
Three new packages of art are available from *INOVAtronic*s. The **Interface Design Kit** is a four-disk set of buttons, icons, and such things as are used in Amiga applications. The most obvious use for these are in *INOVAtronic*s' own *CanDo* authoring system. The images are of everything from a mouse to music to clocks and and laserdisk. They come in both medium- and high-res and cost \$59.95. The other two packages are both by Ryan Roberts, who is an animator at Warner Brothers. **Lunar Construction Set** (\$24.95) provides clips of planets, spaceships, monsters, craters, and the like. **Canvas** (\$34.95) is a collection of full-screen images and animations in a fantasy vein. 8499 Greenville Ave., #209B, Dallas, TX 75231. 214-340-4991. RS #211.

## DELAYED FOR TOAST

One of the trickier aspects of using NewTek's *Toaster* is that when incorporating it into a video system as an "upstream" device, the Amiga's signal must be delayed in order to synchronize with it. What this requires is either tweaking the timing of your genlock, in which case you'll have to reset it when you're using it as a switcher, or you can delay the signal. (Take a look at Oran Sands' explanation of this in his column last issue.) What all this is leading up to is that *Allen Avionics* has produced a little box that will delay the signal anywhere from 360 to 487 nanoseconds, which is just the range needed to synchronize everything with the *Toaster*. It has toggle switches so you can set it to compensate for exactly the delay you need (it will vary a little depending on your cabling, etc.). Cost of the **Video Delay Line** is \$275 and it's available from *Allen Avionics*, 224 East Second Street, Mineola, NY 11501. 516-248-8080. RS #215.

## I.DENTITY

*IDEN Videotronics* is releasing two new timebase correctors that will also function as genlocks. The **TBCard** and **TBCard PLUS** are aimed, respectively, at low- to mid-range and mid- to high-end



A whole slew of icons can be found in the *Interface Design Kit*

applications. The base model will take Y/C and composite signals and offers proc amp control and the system timing can be adjusted via a potentiometer. The **PLUS** model adds more inputs (component, RGB/Sync, and DOC) and provides output in Y/C, composite, and component. The high-end model has proc amp control and system timing that are accessible from an exterior box. *IDEN* is also making an optional external box to house up to ten **TBCard PLUS** cards, which would allow multi-channel timebase correction. Price was unavailable at presstime. 9620 Chesapeake Drive, Suite 204, San Diego, CA 92123. 619-492-9239. RS #216.

## ON THE TBC FRONT

A whole line of video timebase correctors and frame synchronizers is being produced by *Showline Video*. The array of models, features, and specs is truly mindboggling. The models break down into three basic categories. **Spectrum SC** series offers S-VHS, composite, and transcodes; models include the **Spectrum 500SC** (\$1295 - single channel, freeze/frame/field & strobe) **Spectrum 750SC** (\$1895 - adds single channel, proc amp controls, and effects), and **Spectrum 1000SC** (\$2695 - dual channel version). The **Spectrum C** series is less expensive and more consumer-oriented; these are composite only: the **Spectrum 500C** (\$850, single-channel), **Spectrum 900C** (\$1495 - the first dual-channel TBC and frame-synchronizer

under \$1500, and squarely aimed at the *Toaster* market), and the **Spectrum 1000C** (a composite-only version of the *1000SC*). The **QuadCode QC** series is starting out with the **Spectrum 850QC**, which accepts input from NTSC composite, component Y/R-Y/B-Y, and Hi-8 and combines it with computer RGB. The specs on all of these are far too much to list here, but you can get more details from *Showline* at 120 Beacon Street, Boston, MA 02116. 617-262-6844. RS #220.

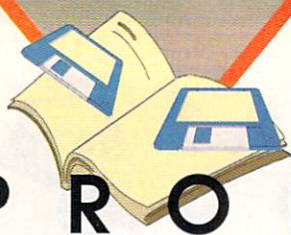
## THIRD EDITIONS

The 3rd edition of the Official *Commodore Doctrine* on AmigaDOS is now available from *Bantam Computer Books*. Covering AmigaDOS through Version 2.04, the 447-page tome includes information on every command and function of the operating system. It also has sections on startup-sequences and other scripts, the difference between CLI and Shell, error codes and messages, file structures, and all the other tidbits of information you're ever likely to need. If you're upgrading to 2.0, be sure to take a thumb-through of this book. Cover price for **The AmigaDOS Manual, 3rd Edition**, is \$24.95. 666 Fifth Avenue, New York, NY 10103. 212-554-9822.

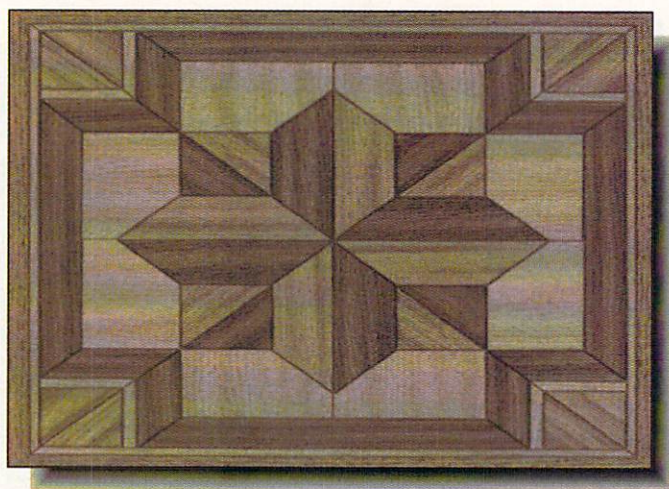
Addison-Wesley is currently shipping the **Amiga ROM Kernel Reference Manual: Includes and Autodocs, Third Edition**.



# NEW PRODUCTS



A wood parquet tile from MicroSearch's *Materials Texture Library: Volume 2*



This is, of course, the definitive reference for programmers. Its 1003 pages contain everything you could possibly want to know about the routines that make the Amiga do what it does under 2.0. It covers Libraries, Devices, and Resources, includes both C and Assembly include files, and is cross-referenced to help you wade through it all. Price is \$38.95. Addison-Wesley, Jacob Way, Reading, MA 01867. 617-944-3700. RS #217.

## MAKING PROGRESS

**P**rogressive Peripherals has announced shipment of their 68040 Amiga accelerator. It comes in two models, the **Progressive 040/2000** and **Progressive 040/3000**. The 3000 model uses 32-bit memory and installs in the A3000's processor slot. It has a "whisper-fan" on the board to keep things cool and is compatible with 16 MHz, 25 MHz, and tower models of the A3000, operating at a synchronous 25 MHz. It retails for \$1595. The version for the A2000 uses 16-bit memory, though the board itself can accept up to 32 megabytes of 32-bit memory. It's compatible with both A and B revs of the A2000 motherboard and is software switchable between 68000 and 68040 modes (the A3000 model is switchable between '030 and '040 modes). The board can accept memory expansion in 1MB x 8 (80ns, 4 or 8 MB), 4MB x 8 (80ns, 16 or 32MB configurations), Page Mode or Static Column SIMMs, and is

available with 0, 4, 8, 16, or 32 megs installed. It operates at 28 MHz asynchronously. Retail for the A2000 accelerator is \$1995 with 4 MB of RAM. It should be noted that both boards require AmigaDOS 2.0 in ROM. 464 Kalamath Street, Denver, CO 80204. 303-825-4144. RS #218.

## MORE TEXTURES

**M**icroSearch has released the second in their *Materials Texture Library* series. **Volume 2: Tiles** is a 5-disk set containing 20 HAM images measuring 480 x 480 pixels each. Obviously, the subject matter of these images is tiles of various patterns, including everything from marble to wood to what looks like vinyl. The images are specifically designed to use with such things as *Turbo Silver*, *Imagine*, and so on. The images are also designed to be easily manipulated into the sizes and number of colors you require using *The Art Department* or other image processing software. Price is \$49.95. 9896 Southwest Freeway, Houston, TX 77074. 713-988-2818. RS #210.

## EDU-WARE

**T**hree recent edu-game titles have passed through the .info offices lately. **Mr. Robot's Speak 'n Spell** (ages 6 & up) has 204 levels of play with over 1000 pictures to expand a child's vocabulary and

help with spelling. It uses crossword puzzles and fill-in-the-blanks as a framework. (The best part, though, is that the package has a wiggle-picture on the cover - how long has it been since you've seen one of those!) \$49.95 from *Brain Technologies*, PO Box 215147, Sacramento, CA 95821. 800-272-4601. RS #222.

*MicroIllusions* is shipping **Discovery 2.0**, a reworking of their lesson-based educational game. The player tries to work through the many levels of a spaceship and must correctly answer questions in order to pass through doors. There are sets of questions available on math, spelling, geography, history, science, social studies, trivia, and so on. The nice thing is that the lessons come on a separate disk and you can add your own or modify existing ones. Price for the basic program (with just math and spelling questions) is \$39.95. A special *Educational Pack* with the other topics is available for \$69.95. PO Box 3475, Granada Hills, CA 91394. RS #221.

*Free Spirit* is converting their *Barney Bear* series in CDTV format. The latest we've seen is **Barney Bear Goes Camping**, which is designed for ages 2-6. It features cute graphics, and aims to teach small kids about nature and the environment (can't start too young!). There are many activities to participate in along the way: a coloring book, matching games, connect-the-dots, mazes, and so on. \$39.95. 58 Noble Street, Kutztown, PA 19530. 215-683-5609. RS #219.

## IR RODENT

**I**f you're tired of your mouse cord getting tangled up with everything on your desk, *Alfa Data* has a solution for you. They're shipping a new cordless, infra-red controlled mouse. It's a three-button model and comes in two pieces: one plugs into the computer and the other lives on your mousepad. The mouse itself can be recharged directly from the computer. Retail price for the **CLM-MT** is \$99.95. 602 North Country Fair Drive, Champaign, IL 61821. 217-356-1962. RS #223.







# NEWS & VIEWS

## AGFA & COMMODORE

**W**e hear from AGFA that the final version of Workbench 2.0 includes three of AGFA's Intellifonts: Times, Trumvirate, and LetterGothic. This scalable font technology is widely used throughout the industry. For example, Gold Disk's *Professional Page* uses scalable fonts, and Hewlett-Packard uses AGFA's Intellifont technology as the scaler for their PCL 5 language. Having Intellifonts incorporated as a part of the Amiga operating system is a big plus. It will also make for some very nice screen displays.

## RELEASE 2.04

**C**ommodore has announced shipment of the five-disk, final-release version of Version 2.04 of the Amiga Operating System for the A3000. The disks sport new rainbow labels and contain version 2.04 of Kickstart, Workbench, Extras, AmigaFonts, and the Install disk. Commodore doesn't charge for the upgrade and copies can be obtained by taking proof-of-purchase to your local dealer. Over 1000

people participated in the beta test process for several years, so the hope is that this will be the most bug-free operating system Commodore has ever released.

## COMPATIBILITY

**I**f you have Commodore's A2620 or A2630 accelerator installed in your Amiga and want to upgrade to the new 2.04 ROMs, be sure to check the version number of the accelerator ROMs. The new Kickstart ROMs require Rev-06 of the accelerator ROMs. If you find yours are earlier, you can get replacement pairs for \$25 from Commodore. The part numbers are 390282-06 and 390283-06. 1200 Wilson Drive, West Chester, PA 19380. 215-431-9100.

## CDTV TITLES

**T**he latest list we have of currently available and announced CDTV titles contains 65 entries. Among the more interesting ones (or at least more entertaining names) gleaned from the list: *Family Circus Home Movie Workshop* (Context,

\$79.95); *A Bun for Barney* (Multimedia Corp., \$49.95); *Heather Hits Her First Home Run* (Discis, \$49.95); *Moving Gives Me a Stomachache* (Discis, \$49.95 - and even sitting still sometimes makes us a little queasy); *Scary Poems for Rotten Kids* (Discis, \$59.95); *The Tale of Peter Rabbit* (Discis, \$59.95 - hopefully with the original Beatrix Potter illustrations); *Defender of the Crown* (CDTV Publishing, \$39.95 - done by Jim Sachs); *Xenon 2: Megablast* (Mirrorsoft, \$49.95 - arcade gaming at its best); *Psycho Killer* (On-Line, \$49.95 and Tom's personal favorite title); *The New Basics Electronic Cookbook* (Xiphias, \$59.95). Bear in mind that some of these have not yet been released, and may change their titles.

## NET NEWS

**C**ompuServe has added a new forum to their already long list. *The Crafts Forum* offers online conferences for those involved in needlework, weaving, woodworking, knitting, crochet, and any other craft you can think up. The forum is being

## .info UPDATE

### ADDRESS CHANGES

- ✓ Zardoz Software is now at 12036 Nevada City Highway, Suite 192, Grass Valley, CA 95945. 916-274-8311.
- ✓ Elan Designs has a new address: PO Box 3136, Half Moon Bay, CA 94019. The phone numbers are 415-726-5097 voice, 415-726-5071 fax.
- ✓ Electronic Arts has undergone a minor move. They've been in two separate buildings and have now moved across the street to a place where they can all be together. The new address is 1450 Fashion Island Blvd., San Mateo, CA 94404. The phone remains the same at 415-571-7171.

### VERSIONS & ADDITIONS

- ✓ HelpDisk has added a version covering Impulse's *Imagine* to their *Buddy System* online help system series. Cost is

\$49.95. 6671 West Indiantown Rd., Suite 56360, Jupiter, FL 33458. 407-694-1756.

- ✓ New Horizons' *ProWrite* is now at version 3.2. The biggest change is the addition of direct PostScript support. The user interface has been reworked, and *ProWrite* can now read *Professional Page* text files. Registered owners of version 3.0 can upgrade to 3.2 for \$20, upgrading from 2.0 costs \$60, and from 1.0 (if there are any still out there) for \$75.

As if that weren't enough, New Horizons has also upgraded *Flow*, their outline/idea processor to version 3.0. They've added ARexx support, saveable configurations, spellchecking, headers/footers, and, most important, automatic outline numbering. Upgrading from version 2.0 will cost you \$20, from 1.0, \$30. PO Box 43167, Austin, TX 78745. 512-328-6650.

- ✓ *Scala*, the titling/presentation package from Digital Vision via Great Valley Products, has been upgraded to version 1.1.

Among the new features are continuous credit scrolling, realtime antialiasing, ARexx support, and the ability to control a Canon Xapshot digital still camera via the serial port. *Scala 1.1* also has support for colorfonts and outline fonts. Contact GVP for upgrade information. 600 Clark Avenue, King of Prussia, PA 19406. 215-337-8770.

- ✓ Octree Software is shipping version 2.1 of *Caligari Broadcast*, their 3D modeling program. They've enhanced the modelling features and added drivers for DCTV, HAM-E, Harlequin, and GVP's new *Impact Vision 24* display boards. An exact upgrade policy hadn't been set at presstime, though Octree tells us that the cost will be "less than \$100." They're also working on a new consumer version of *Caligari* called *Caligari 2* - look for details in New Products next issue. 311 W 43rd Street, Suite 904, New York, NY 10036. 212-262-3116.



# NEWS & VIEWS



run by Susan Lazear, one of the trailblazers in the area of computer-aided craft. Lazear is the guiding force behind Cochenille Computer Knit Products, whose line includes, among other things, interfaces for connecting electronic knitting machines to personal computers, including the Amiga. Her expertise and Amiga-enthusiasm are top-notch and her appearance on this new CompuServe Forum guarantees it will be worth looking in on.

## NEW UTOPIA

**T**odd Rundgren is the current darling of the Amiga video community, being both a rock star and an Amiga aficionado. His latest video, *Change Myself*, was Toaster made, and now Rundgren has announced the formation of NUtopia, a computer/video production company. Among those involved: Ron Thornton, who worked on special effects for such films as *Terminator II*, *Spaceballs*, and *Ghostbusters*; John Sanborn, who was director of *Alive from Off Center*, a PBS series that features short films and animations; Allen Hastings, author of *LightWave*, the Toaster rendering package Rundgren used in making *Change Myself*.

## VICE VERSA

**I**n the ordinary scheme of things, computer games are based on movies and TV shows, but in a reversal of the usual, Broderbund's *Where in the World is Carmen Sandiego?* has been made into a TV game show. A co-production of WQED in Pittsburgh and WGBH in Boston, the show premiered nationwide on PBS on September 30. Using live actors, animations, studio participants, and a celebrity cameo here and there, the gameshow looks like it will be a success. The show is co-produced by Kate Taylor (*Degrassi Junior High*) and Jay Rayvid (*Wonder Works*). It's targeted at kids in the eight to 13 age group and we're in favor of anything that will help teach kids (and grown-ups, too) geography.

## SHOWS

**T**he next European AmiEXPO shows will be held in Koln, Germany from

October 31-November 3 and in London November 14-17. Over 60,000 people attended the show in Koln last year, and the 1991 show promises to be even bigger.

The second annual CyberArts International show is to be held November 15-17 at the Pasadena Center in Pasadena, CA. Devoted to computer uses in the arts, entertainment, and education fields, the show will feature sessions with industry gurus. Among those scheduled to appear are Trip Hawkins (Electronic Arts), Rand Worrell (Mattel), Charlie Richmond (responsible for many of the effects in *Siegfried & Roy's* show at the Mirage in Las Vegas as well as *Miss Saigon* on Broadway), Carl Rosendahl (Pacific Data Images), Jaron Lanier (VPL Research, a company leading the way in virtual reality), Brenda Laurel (Telepresence), and Kirk Austin (Lucas-

film). There will also be a session on NewTek's *Toaster*. The list of sessions, exhibits, and other cyber-activities goes on and on. The three-day cyber-extravaganza costs \$450 and you can get registration information from CyberArts, 20085 Stevens Creek Blvd., Cupertino, CA 95014. 800-82-CYBER.

## ON THE AIR

**S**ome cable systems are showing *Amiga Artists on the Air*, a half-hour series showcasing the work and methods of Amiga artists. If your local cable system doesn't carry the program, you can get VHS tape copies for \$15 each. For more information, contact Willow Mixed Media, PO Box 194, Lennox Ave., Glenford, NY 12433. 914-657-2914.

## THE RUMOR MILL

**DISCLAIMER:** The following are among the most entertaining rumors we've heard the past month. They are presented for your entertainment and amusement only. Please do not make any important decisions based on these rumors, as some will prove to be inaccurate or just plain false.

➤ Upgrade software from Commodore is letting developers get 15 frame per second 3/4 screen full-motion video out of CDTV. While that's not broadcast-quality, it is adequate for many applications. No word yet on who'll be first to use it.

➤ Commodore 'let go' 33 marketing people in mid-July, then 12 software engineers in August. Will the last one out please turn off the lights?

➤ When Free Spirit's *Sex Vixens from Space* was first released last year, a shipment was seized by British customs officials as 'pornography,' until they could be convinced it was all just good, clean fun. Well, Free Spirit got a call from Canadian customs officials a few

weeks ago -- but this time they were just *playing* the game and needed some hints! Free Spirit's tech support staff gladly provided the needed clues.

➤ Nintendo and Sega have reportedly targeted Europe with millions of ad dollars for the Christmas season. Can they take the European games market away from Commodore? Without Europe, Commodore's sales would flat-line. We'll see.

➤ Who's buying CDTVs? According to the feedback we get, it's not 'Joe Couch Potato,' the guy Commodore's marketing plan is aimed at. It's - you guessed it - folks who already own Amigas. Who would'a thunk it? :)



# Making the Most of Miniatures: ICD's Tiny Amiga Additions



Ever since the first four-bit microprocessor, small has been what microcomputing is all about. The newest microprocessors contain more than a million transistors, and 64 megabit memory chips are already on the drawing boards. ICD is striving to make the word 'small' take on a new meaning for Amiga users. They have succeeded in squeezing into the space occupied by a single large-scale chip accessories that most developers place on a full-sized Amiga 2000 card.

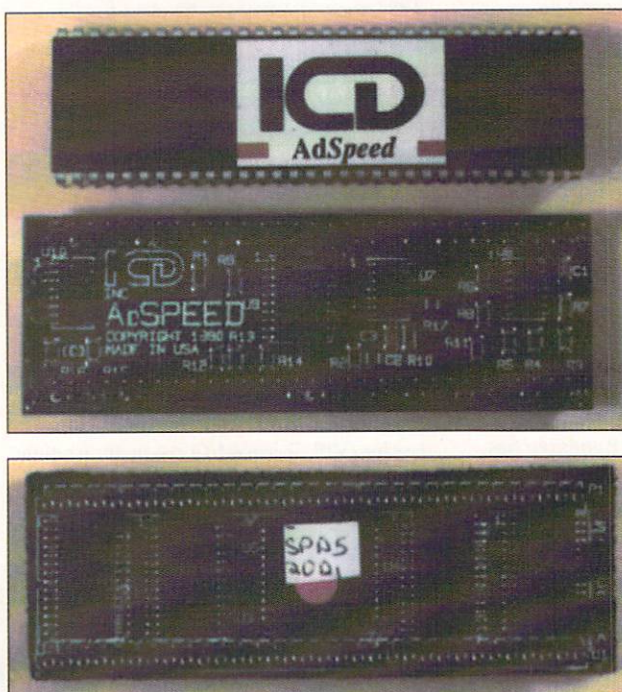
These reductions in scale without any loss of performance are made possible by the extensive use of surface mounted chips. These are standard chips in miniaturized packages whose mounting leads are soldered to the surface of the printed circuit board. (With conventional printed circuits, the chip leads are inserted into holes which have been drilled through the circuit board.) To further reduce the size of their products, ICD mounts the chips on both sides of the board. Since these accessories usually install into the socket of a standard Amiga chip, ICD also squeezes most of the components into the space between the parallel rows of mounting pins of the original chips!

Miniaturizing on this scale requires greater precision than conventional construction techniques. As a result, ICD's products are somewhat more expensive than full-size products that perform similar functions. To help offset their higher prices, the ICD products have features which cannot be obtained with full-sized devices.

With the exception of the *AdRAM* series of RAM expansion boards, all the devices that I will look at this month can be installed in an Amiga 500, an Amiga 1000, or an Amiga 2000.

### ADSPEED

The concept behind *AdSpeed* is very simple; to make the Amiga run faster, simply make its 68000 microprocessor run



Top view of *AdSpeed* with the 68000 removed reveals the 32K static RAM cache. Bottom view shows additional components mounted between the socket pins.

faster. In practice, it takes a little more than speeding up the microprocessor to implement this idea. The 68000 is just a small part of what makes up an Amiga. The Amiga's custom chips and the system's RAM are designed to run at a clock speed just a bit faster than seven million cycles per second. Simply speeding up the 68000 will leave the rest of the system behind.

To install *AdSpeed* install it in place of the system's 68000 cpu chip. Since *AdSpeed* comes with its own faster 68000, the original cpu chip should be stored in a secure place. *AdSpeed's* length and width are only slightly larger than the 68000 itself, and its overall height is about three times that of the microprocessor. Four jumper pins are located at one end of the board, though only two of these are active - the second pair is for future options. If the active pins are connected, *AdSpeed* will power up at the Amiga's normal speed. If the pins are left open, it accelerates.

The instruction manual suggests the connection of an optional switch to the speed pins to let you change processor speed in midstream. You will have to pro-

vide your own switch and wire for this modification. The clock speed can also be changed by using a supplied utility program which can be run from the Workbench or CLI. ICD has found that some Amiga peripherals do not like to power up at the accelerated speed. The work-around is to set *AdSpeed* to power up at the slow speed and then switch to the fast speed. You can put the *AdSpeed* program in your startup-sequence for this purpose.

*AdSpeed* is built around a 68000 microprocessor running at a clock speed of about 14.3 megahertz, double the speed of your average Amiga. *AdSpeed's* actual performance increase is realized through the clever use of 32K of static RAM. This memory is equally divided between RAM cache and cache tags.

The contents of chip RAM are invisible to *AdSpeed*. Thus, the best performance gains will be realized with programs that run repetitive loops from fast RAM. Fortunately, most software falls into this category. To get some idea of what kind of performance improvement could be expected with *AdSpeed*, I ran up ASDG's *Art*



*Department Professional.* Loading a 1024x768 color GIF image from a Xetec CD-ROM drive required 45 seconds at the seven MHz clock speed, and only 27 seconds at the 14 MHz clock speed. Converting the same image to a hi-res interlaced 16 color screen display took 110 seconds at seven MHz and only 57 seconds at 14 MHz.

Since *AdSpeed* is simply an accelerated 68000, it cannot be used with a math coprocessor. Programs which require the presence of a math coprocessor will not find one with this accelerator. I also found that *AMax II* (the Macintosh emulator from ReadySoft) would not run with *AdSpeed* in the accelerated mode. The main advantage of using an accelerated 68000, as opposed to a 68020/68881 combination, is to ensure software compatibility with older programs that may not have been written with microprocessors other than the basic 68000 in mind. If you are looking for a modest boost in performance at the minimum possible cost, *AdSpeed* will do the job. Based on the current street prices, *AdSpeed* can be bought for less than half the cost of the lowest priced 68020/68881 accelerator on the market.

## FLICKER FREE VIDEO

No, *Flicker Free Video* will not provide you with free flickers to use with your video. To the contrary, it is a de-interlacer which aims to remove the flicker which is an unavoidable result of NTSC composite video. Here is a condensed version of the mandatory lecture on NTSC video that must accompany every de-interlacer review - if you think you already know all about the video display; just skip the next paragraph.

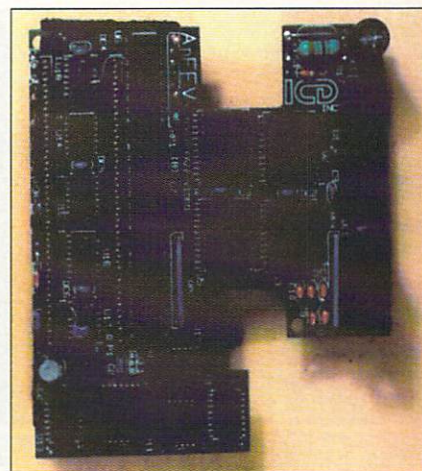
The NTSC video flashes fresh images on the video display about 30 times per second. A complete image is called a frame. The images are scanned onto the screen in two parts, or fields, and fields appear at rate of about 60 per second. An NTSC frame is built up of 525 lines with 262 1/2 lines per field. The lines are progressively scanned from the top to the bottom of the screen. The two fields are interwoven so that the adjacent lines on the screen always belong to alternate fields. The glowing phosphors on the screen fade from view at such a high rate that each line disappears before the next one is scanned. End of lecture. We now return to our regularly scheduled review.

Some simple low-cost or no-cost ways to reduce or eliminate flicker are dark sun glasses, reduced room lighting, turning down the contrast controls on the monitor, or low contrast screen colors. The best way to eliminate interlace flicker is to get rid of it entirely. This is just what a de-interlacer board such as *Flicker Free Video* does. First it memorizes an NTSC field in its on board buffer. When the second field comes along, it sends out the first line from the first field followed by the first line of the second field and so on until the entire image has been displayed. The result is that the lines from both fields are displayed in order and interlace, with its accompanying flicker, is eliminated. Of course, a normal monitor is not capable of accepting video at this accelerated rate, so you also need to buy a more expensive multi-sync monitor.

*Flicker Free Video* is equipped with a three megabit buffer which is just large enough for a single high-resolution field. To keep up with the doubled scan rate, *Flicker Free Video* replaces each line from the first field with the corresponding line from the next field as it displays the contents of its buffer. When the original display is non-interlaced, the resulting display looks very smooth as all the interline gaps have been neatly filled in. With a rapidly changed interlaced display, motion artifacting may occur. This happens when *Flicker Free Video* combines the fields from two successive images that have changed drastically. Fortunately, these events do not occur very often.

To install the unit you have to open the computer, locate and extract the Denise chip, insert the board into the recently vacated socket, and reinstall the Denise chip in the corresponding socket on the *Flicker Free Video* board. This leaves the video slot in the Amiga 2000 free for other applications. In the Amiga 2000, the Denise chip is located under the power supply. In the Amiga 500, Denise sits in the back to the left. In the Amiga 1000 you will have to remove the 512 kilobyte Kickstart RAM daughterboard and perform some minor modifications to the circuit board. The modifications require the installation of some components and some soldering. ICD offers to do the Amiga 1000 installation for \$40 plus shipping and handling.

If you have the enhanced chip set installed in your computer, you also have to change a couple of *FFV*'s jumpers. You complete the installation by plugging a short length of nine-conductor flat ribbon



*Flicker Free Video* has all its components mounted on the top surface.

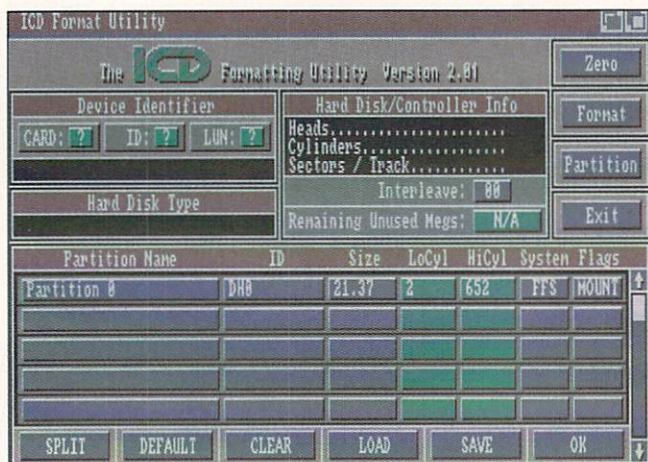
cable into a socket on the *FFV* board. For the Amiga 2000, the other end of the cable is fitted with a nine-pin "D" connector mounted on an expansion slot bracket. For the Amiga 500, the cable with the nine-pin socket hangs out the rear. A nine-pin to 15-pin adapter is provided for use with display monitors that use the 15-pin cable.

Once installed, *Flicker Free Video* is completely transparent to the operation of the Amiga. You can continue using the original RGB port and Amiga monitor without the benefit of the de-interlaced display. To complete the flicker-free side of the setup you will need either a VGA or a multisync monitor. The advantage of the multisync monitor is that it can be used with both the original interlaced display and the *Flicker Free Video* output. Just make sure that the monitor can synchronize with the 15 kilohertz Amiga scan rate as well as the 31 kilohertz *Flicker Free Video* scan rate. Since *FFV* does not have a bypass switch, you will also have to switch the monitor cable between its output socket and the Amiga's RGB connector.

I tested *Flicker Free Video* on an NEC Multisync 3D high-resolution monitor. The results were superb.

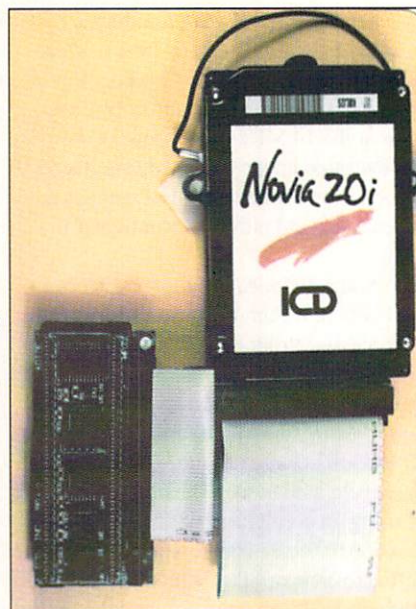
There are not too many options when it comes to de-interlacer boards for the Amiga. I cannot say how *Flicker Free Video* stacks up against the Commodore and MicroWay de-interlacer boards. *Flicker Free Video* looks like a good choice for the A500 or A1000 computers or for the A2000 if you want to free up the video slot for another device.





ICD's painless hard drive setup software.

Complete *Novia 20* assembly. *AdSpeed* or 68000 plugs into the socket strips.



## NOVIA 20i

*Novia 20i* is a 20 megabyte hard drive package made up of ICD's *AdIDE* host adapter and a 20 megabyte Connors 2 1/2 (yes, TWO and a half) inch IDE hard drive. *AdIDE* is an IDE host adapter that is not much larger than the 68000 microprocessor. To install *AdIDE*, you open up the computer, remove the 68000 from its socket, plug *AdIDE* into the socket in its place and reinstall the 68000 in the corresponding socket on *AdIDE*. The IDE cable connects to a 44-pin header located along the edge of the circuit board. A pair of jumper pins lets you choose between floppy booting with Kickstart 1.2 or autobooting from the hard drive with Kickstart 1.3.

The 2 1/2 inch hard drive is mounted on a matching metal plate which is then mounted directly on the Amiga's motherboard using double sided tape and three nylon feet. A ground wire connection from the mounting plate to any nearby mounting screw completes the installation. The short length of flat ribbon cable is folded in a way that the hard drive ends up in a convenient location in the Amiga 500 where the tripod mounting can straddle several key components. Since the 2 1/2 inch hard drive was designed for use in laptop computers, there should be no problem powering it from the Amiga 500's original power supply. However, I did notice that the area under and around the 68000 was a bit warmer with *AdIDE* installed. ICD claims that *AdSpeed* can be installed along with *AdIDE* and the combination will work just fine. The problem with installing both *AdSpeed* and *AdIDE* in an Amiga 500 is that their combined height prevents the closure of the computer's case.

The hard drive setup software is the

same program that ICD uses for all of its hard drive host adapters. The full-screen window makes the partitioning and formatting of the hard drive as painless as possible. Performance of *Novia 20i*, based on DiskSpeed 3.1 is about average as compared to the other host adapters I have looked at.

If you are determined to save desk space while cramming the maximum amount of power into an Amiga 500, then *Novia 20i* is certainly worth considering. The 20 megabyte capacity is a bit small by today's standards, and you will pay a premium for the compact packaging. Based on the current street prices of Amiga 500 hard drives, you should be able to buy a conventional add-on hard drive system with more than twice the capacity for about the same price as the *Novia 20i*.

## ADRAM

Last, but not least, ICD's *AdRAM 540* with the *AdRAM 560D* daughterboard lets you install a battery-backed clock/calendar and up to six megabytes of RAM in the Amiga 500's belly slot. I took a close look at *AdRAM*, as well as a competing product, in issue #38. Since I have already exceeded

my allotted space for this issue, I will refer you to my earlier report for the details.

Overall, ICD's products are marvels of miniaturization. If you are in the market for several power peripherals without the desk space on which to set them up, then ICD's product line is well worth considering.

*AdSpeed* \$349.95

★★★+

Flicker Free Video \$499.95

★★★★

*Novia 20i* \$559.95

★★★+

*AdRAM 540* \$159.95 Unpopulated

★★★+

ICD, Inc.

1220 Rock Street, Rockford, IL 61101  
815-968-2228

## DiskSpeed 3.1 Test Results

Device: *Novia 20i*

Test Intensity: Med; Performance Stress: None

26 Files Create, 40 Files Open/Close, 117 Files Scan, 34 Files Delete, 180 Seek/Read

Buffer Size	512	4K	32K	256K
Bytes Create	66874	154628	276168	308546
Bytes Write	80817	168933	358631	438620
Bytes Read	72374	167493	367216	414892



# Programs to Read, Create, Analyze, and Dial



Public domain and shareware programs are available from many sources, including disk distributors and online services. Those reviewed this month were obtained from:

Cranberry Software, PO Box 565, Carver  
MA 02355, 800-321-0815.

GEnie Online Information Service,  
800-638-9636.

### VIEW-80 [GEnie #11795]

Sometimes as you browse the files on the electronic services, you happen across a utility that does what it does better than anything else. *View-80* is such a program. So it's an ASCII file reader - "big deal," you say. Well, this is a file reader with a difference. First of all, it's blazingly fast. Moving a slider at the bottom of the screen zips you through a text file faster than you can read it. It searches for strings, filters out ASCII garbage, and generally does everything a program of its type should. And this file reader can hold up to ten different files in as many buffers, allowing you to switch from one to another instantly. With the required library on your disk, it will also read Power-Packed text files. It prints too, including specified ranges. *View-80* is shareware (\$15), and worth it. An excellent



Pop Art  
from  
Cranberry  
Software

effort from Federico Giannici of Palermo, Italy.

### POP ART [CranWare #156]

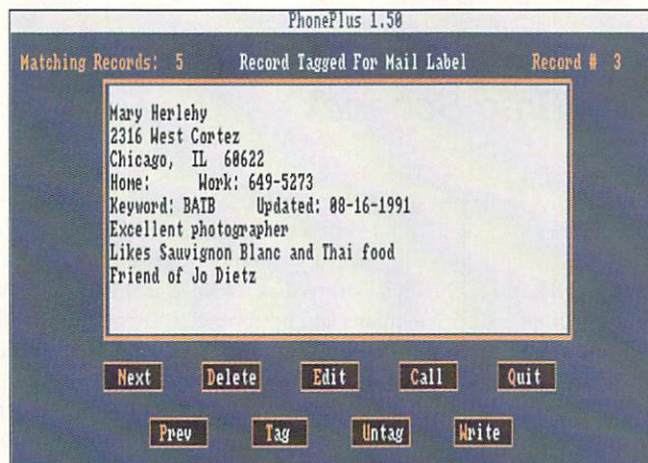
How shall we describe *PopArt*? It is, I guess, an image creating/painting program with a sense of humor. With a few judicious choices, you can create vivid "op art" style graphics and then combine them into a page flipping animation. This thing is fun! Also on #156: *Pop Art Lite*, a similar program, and another to produce dropshadows for video titling fonts, along with the venerable *ROT*, which generates 3D objects and moves them over 24 frames to your specifications, producing short animations.

### LUSCHER COLOR TEST [GEnie #11982]

The validation of psychological tests has been a matter of great controversy. If they work, how well they work, and what they tell us are ongoing questions. The Luscher Color Test has been around for more than 20 years, and seems deceptively simple on the surface. You are presented with a palette of eight colors (originally on individual cards) and told to select them in the order of your "sympathy" for them. Then you are asked to do it again, and the results are presented on screen or directed to your printer. You may be shocked, as I was, at the apparent accuracy of this test. It draws conclusions about your state of mind based on your affinity for the various colors at any given time. There is a book available (*The Luscher Color Test*) which explains the concept, though I haven't seen it in years. If psychology interests you (I'll bet you own *Mind Prober*, right?) you will want to download this. PS: Kids, don't hang out your psychologist shingle without meeting the requirements of your state, ok?

### PHONEPLUS [GEnie #11872]

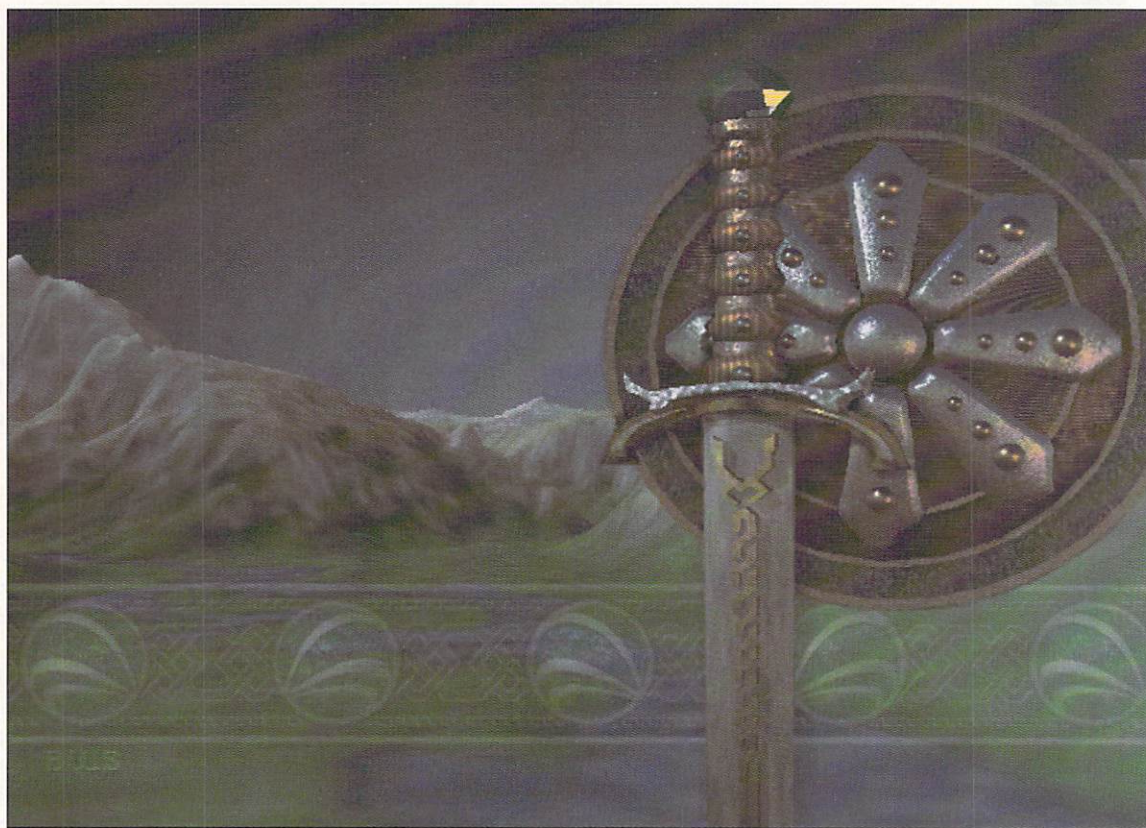
*PhonePlus* is a nice-looking phone number/address database and dialer which also prints mailing labels. The interface is appealing, and I like the way the data is presented, much like a Rolodex(TM) card.



Phone Plus  
address book  
and autodialer.



We get a chance in each issue to discuss what's new in graphics software; but in concentrating on the features in any one package we seldom see a real instance of how all these tools work together - and they must work together, since any one project is likely to require procedures that involve several different programs. Because of the early standardization of the IFF graphics format, we Amiga artists have always been able to combine the strengths of our tools, to the betterment of our work. Here's a case history of an image that passed through several different tools on its way to completion. It involves both 3D and 2D graphics software and image processing as well.



# *Tir Na Nog*

*by Brad Schenck*

**T**o the ancient Irish, Tir na Nog was 'The Land of Youth.' It's an otherworld, another plane of existence that's sometimes reachable from ours. Being an Irish legend, Tir na Nog has its share of fighting as well - it was a variation on the earthly plane with a bit more magic than we have here.

This 24-bit illustration was meant to catch some of the earthlike and yet unearthly spirit of that place.

The background was rendered with *Vista Pro* (the geo-

graphical and fractal landscape generator) in 24-bit color. I rendered two versions of the same scene in *Vista*: one with a daytime sky, the other with a starry dark one. After saving these off to disk I loaded them into *Toaster Paint*'s two screens and performed a 'Rub-Through' from one to the other. By using a highlighted fill, I rubbed a lot of blue into the night sky at the horizon, fading out to very little blue in the screen's corners. That gave me a nicely shaded twilight sky (see Figure 1). I saved the new version out and got to work with my 3D rendering tools.

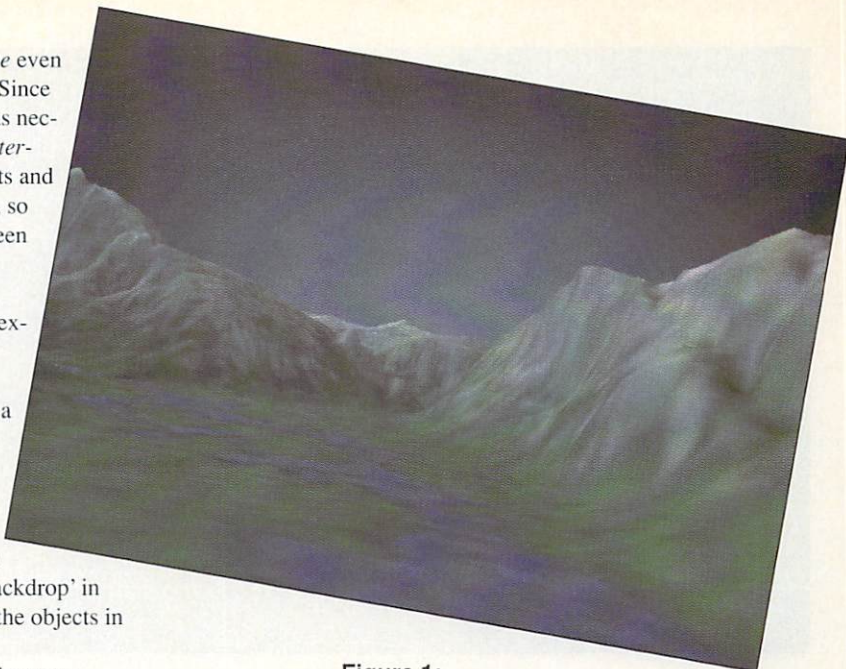


The sword and shield objects were created in *Imagine* even though I intended to render the image with *Lightwave*. Since 3D objects are not saved in a standard file format, it was necessary to convert the *Imagine* objects with Synthesis' *Interchange*. *Imagine* and *Lightwave* are both recent products and aren't at this writing directly supported by *Interchange*, so this is a tricky process. An update to *Interchange* has been announced that will make the conversion much easier.

In *Lightwave* I created the 'surfaces' used on the objects. I made use of one of *Lightwave*'s algorithmic textures (wood) and also its 'fractal noise' maps for both color and bump mapping. Bump mapping makes a smooth surface appear to be rough or pitted, or gives it a simulated raised pattern. All of these features help the 3D artist avoid pictures full of smooth shiny objects that all look like chrome, plastic, and glass.

Once I had the objects and their surfaces the way I wanted them, I rendered the scene at 736x480 pixels in 24-bit color. I used my touched-up *Vista* image as a 'Backdrop' in *Lightwave*, so that it appeared as a background behind the objects in the scene.

I then loaded the rendered image into *Toaster Paint* for some retouching. Arriving at the perfect lighting for a 3D scene is as challenging as building the objects; in the case of still images it can be faster to retouch a little than to experiment with the lighting until it's exactly right. So I made some adjustments to the shadows in the piece, after which it was ready for the next step.



**Figure 1:**

Here, two *Vista Pro* renderings have been combined into a single image that will become the background for the picture.

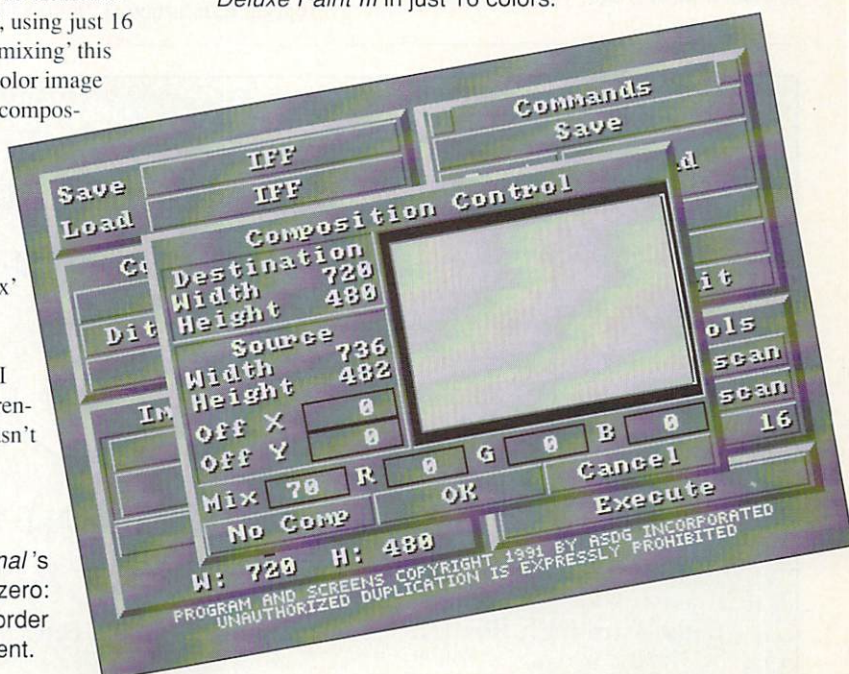


**Figure 2:**

A decorative border is designed in *Deluxe Paint III* in just 16 colors.

I planned to add a decorative strip across the lower part of the image. This uses a combination of Celtic and Art Nouveau elements. I painted the border alone (Figure 2) in *Deluxe Paint III*, using just 16 colors. This was more than adequate, since I would be 'mixing' this into the 24-bit image using a transparent effect; the 16 color image would modify the far more colorful picture it was to be composited into.

ASDG's *Art Department Professional* allows just this sort of compositing, and that's where I turned next. First I loaded in the 24-bit picture, already a veteran of *Vista*, *Imagine*, *Toaster Paint* and *Lightwave*, and then composited the 16 color border image into it with a 'Mix' value of seventy per cent (see Figure 3). This wasn't strictly necessary; I planned to do some more 'mixing' later in *Toaster Paint*, but I wanted to see roughly what I was getting. The result, Figure 4, shows the *Lightwave* rendering with a border strip laid straight across it. This wasn't quite what I wanted, but I was nearly there.



**Figure 3:**

The *Art Department Professional*'s R, G, and B values are set at zero: this makes all blacks in the border picture completely transparent.





**Figure 4:**

At this stage, the backdrop has been used in a *Lightwave 3D* rendering, and the border design mixed into it. The picture just needs one more excursion into *Toaster Paint*.

Once again I loaded the image into *Toaster Paint*, both the composited and the original versions (one on the spare screen). Again I used transparency (this time without a highlight effect) and the Rub Through painting mode. I worked on the original image's screen and rubbed through to the composited picture 'behind' the sword and shield, leaving them standing in front of the border. This created the layered effect I was after, as you see in the completed painting.

There would have been several other ways to accomplish some of these same effects; this is simply a description of the steps I took this time, with the most appropriate tools I had. While it probably sounds very involved and awkward, I can assure you that it wasn't; once you're familiar

with a set of tools, it's second nature to go from one to another as you work, taking advantage of the strong points in each.

If you *want* awkward, let me tell you about... oh, never mind. Another time.

### Addresses

*Vista Pro*, \$149.95

Virtual Reality Laboratories, Inc.  
2341 Ganador Court  
San Luis Obispo, California 93401  
(805) 545-8515

*Lightwave 3D* and *Toaster Paint*, (bundled with the Video Toaster, \$1595.00)

NewTek, Inc.  
215 E. 8th Street  
Topeka, Kansas 66603 (800) 843-8934

*Imagine*, \$350.00

Impulse, Inc.  
6870 Shingle Creek Parkway #112  
Minneapolis, Minnesota 55430  
(612) 566-0221

*Deluxe Paint III*, \$149.00

Electronic Arts  
1450 Fashion Island Boulevard  
San Mateo, California 94404  
(800) 245-4525

*Art Department Professional*, \$240.00

ASDG, Inc.  
925 Stewart Street  
Madison, Wisconsin 53713  
(608) 273-6585

There must be somebody who prints Amiga technical information for less than \$59 a year. Of course there is.

for AMIGA USERS!

**.info**

And our tech section is FREE.

**.info technical support**

This issue includes Unix, Quarterback Tools, and more starting on page 54

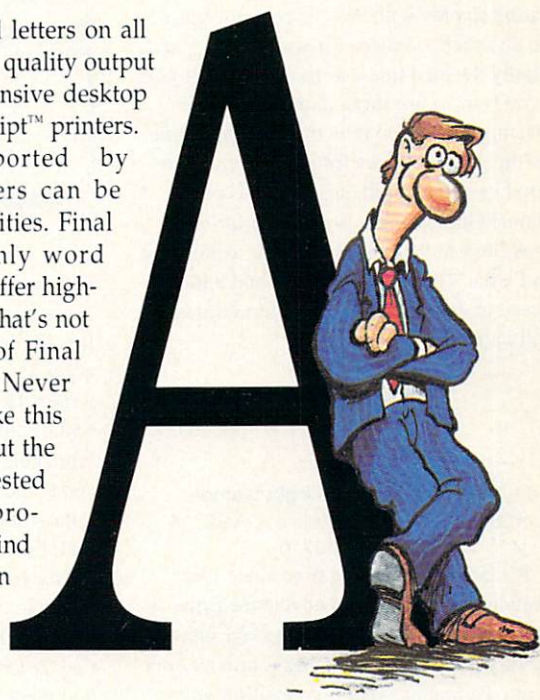


# Before you purchase a new word processing program ask for character references

(and then ask the price!)



Say goodbye to rough, jagged letters on all of your printouts. Until now, quality output was only possible from expensive desktop publishing programs or PostScript™ printers. Now any printer supported by Workbench™ printer drivers can be utilized to its fullest capabilities. Final Copy™ is the first and only word processor on the Amiga to offer high-quality outline fonts. And that's not all...Check out the rest of Final Copy's™ great features. Never before has a program like this been available. Check out the price. If you are interested in a quality word processor, you will not find a better value than Final Copy.™



#### Outline Fonts:

- Size fonts from 4 to 200 points
- Leading (line spacing) from 4 to 200 points
- Compress/Expand character widths
- Underline, Double Underline, Strike-Thru
- Small Caps/All Caps
- Superscript/Subscript

#### Word Processing Features:

- 116,000 word Spelling Detector and Corrector
- 470,000 synonym Thesaurus with definitions
- Automatic hyphenation
- Multiple columns (1-6)
- Search and Replace
- Title page option
- Header/Footer option
- Left, right, center, and decimal tab stops
- Left, right, center, and full paragraph justification
- Document statistics
- Copy/Paste ruler
- Insert date, time, and page numbers
- Custom page sizes

#### User Interface Highlights:

- Ruler displayed in inches, picas, or metric

System Requirements: Amiga™ with 1 megabyte RAM, and either a hard drive or 2 floppy drives.

*Final Copy*™  
from  
**SoftWood**

© SoftWood, Inc. P.O. Box 50178, Phoenix, AZ 85076

**1(800)247-8314**

Visa/Mastercard Accepted

**ONLY \$99<sup>95</sup>**

- Magnified and reduced page views
- User-defined preferences
- ARexx port

#### IFF Graphic Support:

- Real-time text flow
- Scale to any size
- Cropping
- Place anywhere on page
- Depth arrange
- Also supports HAM and Extra Halfbrite

#### Final Printing:

- Print at full resolution of printer
- 12 Bit-plane printing
- No jagged edges
- Pictures print in their original colors

#### Draft Printing:

- Print at maximum speed of printer
- Left, top, right, bottom, and first margins
- Use printer's built-in fonts

#### Printing General:

- Use standard Amiga printer drivers
- Print and edit documents simultaneously

Workbench 1.3 and 2.0 compatible.

Circle #160 on the Reader Service Card



# Computer Thumb Twiddling and Other Idle Pursuits



We are taking a little time off from the standard Cyberplay this issue. Mark and I are longtime fans of software ephemera, those little bits of code that don't do anything productive, but are fascinating to play with. We've been meaning to do an article on them for several years and finally decided this was the time to fill you in on how to use them in the fine art of wasting time. We know this skimps a little on the game reviews for this issue, but the good news is that the next issue is our annual Games issue. Stay tuned for our look back at the best of the year, what's hot and what's not in new games, and a look ahead at what's coming in entertainment software.

## WONDERLAND



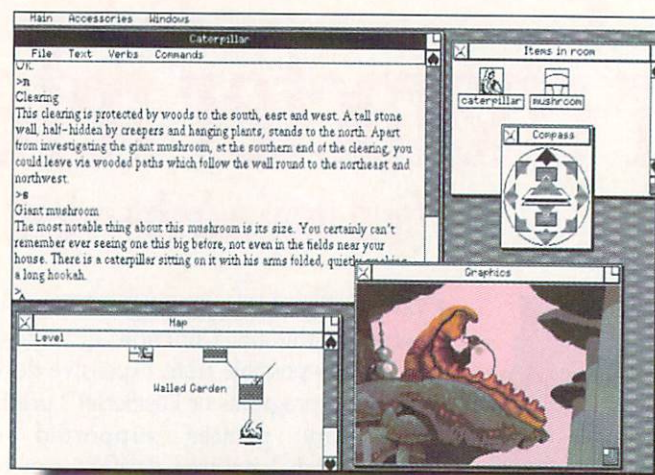
Magnetic Scrolls/Virgin Games

18061 Fitch Avenue, Irvine, CA 92714,  
714-833-8710

It's been a long, long time since I've been as smitten with an adventure game as I am with *Wonderland*. Taking any famous literary work and translating it into an interactive format is a risky proposition, but Magnetic Scrolls has succeeded in a way that not only retains the nonsensical flavor of *Alice in Wonderland*, but also revives and rejuvenates the text-adventure genre.

*Wonderland* doesn't try to be *Alice in Wonderland*, taking instead the approach of putting you in the role of Alice and letting you explore the weird realm of the White Rabbit and the Queen of Hearts in your own way. It's all a dream, of course, just as in Lewis Carroll's classic novel, and the object of the game is to complete the dream.

Most computer games these days don't seem to much care about literary quality, but *Wonderland* clearly does. The writing is sharp, clear, and true to the spirit of the original. It is also grammatically correct and spelled properly, something far too rare



Visiting the caterpillar in Virgin Games' marvelous *Wonderland*.

in computer games (and everywhere else, for that matter) of the past couple of years. It is literate without being ponderous, literary without being pompous. The game's writers have kept Carroll's world intact without intruding on it, or, heaven forfend, 'enhancing' it. The graphics are stunning, and some have bits of animation. They retain much of the style of the original Tenniel illustrations, but have the same respect for the original book as the text. In general, the characters aren't shown, leaving them intact in the player's imagination where they belong. There are bits of music here and there in the game, though there are few sound effects. There's so much going on visually, though, that I didn't miss them.

I had a tough time deciding to give *Wonderland* five stars. It most definitely doesn't look like an Amiga game and in fact, looks like it's running on the IBM it was ported from. I suppose I've mellowed a little over the years; if something is good, it's good. It doesn't matter where it comes from. *Wonderland* uses a multiple window system; there are separate windows for the text, graphics, map, inventory, compass, and so on. You can have any or all of the windows open, drag them around the screen, resize

them, and generally tailor the display to suit your taste. The interface is so good that if you don't want to do any typing, you don't have to. There are two sets of menus that, when combined with the windows, mostly eliminate the need to use the keyboard.

*Wonderland* is one of those rare works that is far more than the sum of its parts. It is suitable for adults and kids both. In fact, one of the first things I did after playing the game was dig out a copy of the book and reread it. What a great way to introduce this classic work to kids - let them play the game and then read the book. They'll certainly want to. *Wonderland* is, pardon me, wonderful; I'll be playing it for years to come.

## BIG BUSINESS



DigiTek

1916 Twisting Lane, Wesley Chapel, FL  
33543, 813-973-7733

This is the first laugh-out-loud game I've played since New World's *Nuclear War*. In fact, it has much the same sense of lunatic humor that made *Nuclear War* such a success. *Big Business* is right on-target with its

Incredible



Very Good



Average



Poor



Drek





jabs at every aspect of the business world. The game pits you against two other players (human or computer) and you must out-wit them in such things as sales, research & development, commodities trading, pricing, and other aspects of the greedy business of coming out on top.

The game is entirely point and click, making the mechanics nearly transparent. The graphics are cartoonish, and even though they only use 16 colors, you'll never notice. There are innumerable weird little touches of animation that add immensely to the game - be sure to click on everything on every screen. You'll be delighted with what you find. The sound effects are minimal, though, and I found myself wishing there had been more of them.

Good as *Big Business* is, DigiTek has also included a second, separate bonus game in the box. *Wallstreet* is a far more realistic game of stock trading and portfolio management. It isn't even close to *Big Business* in entertainment value, but its inclusion is a generous touch and it's certainly worth looking at.

*Big Business* is an absolutely hilarious game. Invite a couple of friends over to play and you'll have a terrific time. Do it on a weekend, though. Your ribs will hurt too badly to go to work the next day.

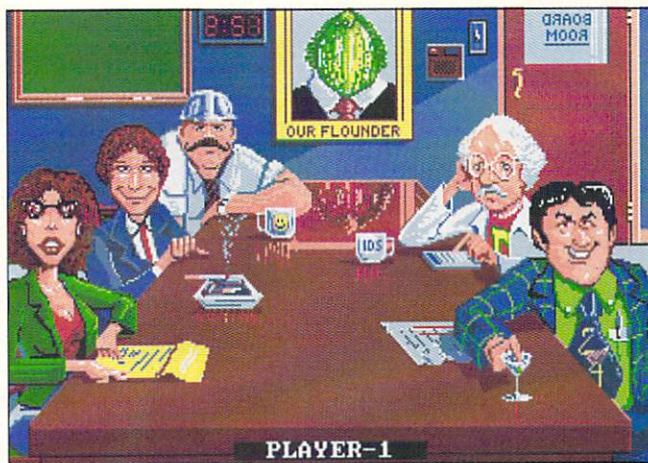
## BILL ELLIOTT'S NASCAR CHALLENGE



Konami

900 Deerfield Parkway, Buffalo Grove, IL 60089, 708-215-5100

Similar to EA's *Indianapolis 500*, Bill Elliott is set in the world of NASCAR rac-



DigiTek's wickedly funny *Big Business*.

ing instead of Formula One. Developed by Distinctive Software (*Test Drive* and many other racing simulations), there really isn't much to set this game apart from others of the genre except the Bill Elliott name.

The graphics are a combination of bitmaps and vector, and are handled with plenty of speed. I think the controls, like several other DSI-developed titles, are a little too touchy. The manual recommends using the keyboard instead of the joystick, and while I found that helpful, I don't like playing a racing game with the keyboard. I would much rather have some provision for calibrating the joystick response.

You are given three racecars to choose from, and you can tune and tweak them to your heart's content. Several different raceways are included, from Daytona to Talladega, and you can race the whole season to become the NASCAR champ.

If you're not a die-hard racing fan and you already have a car racing game on your

shelf, I'd give *Bill Elliott* a miss, but if you're a fanatic where racetracks and fast cars are concerned, you'll certainly want to check this one out. It's not at all bad, it just isn't anything new.

## BATTLE CHESS II: CHINESE CHESS



Interplay

3710 S. Susan, Santa Ana, CA 92704, 714-549-2411

I don't want to be disappointed in this game, but I just can't help it. The original *Battle Chess* is one of the two or three best things ever done on the Amiga. Benn and I couldn't wait to get the sequel booted up, but after about three minutes we both had the same reaction: "Why bother?" The problem isn't the execution, which is exceptional; it's the underlying concept. There's already been a Chinese chess game (published by Eagle Tree Software), and it proved that the Chinese version of the game isn't very interesting to Western audiences.

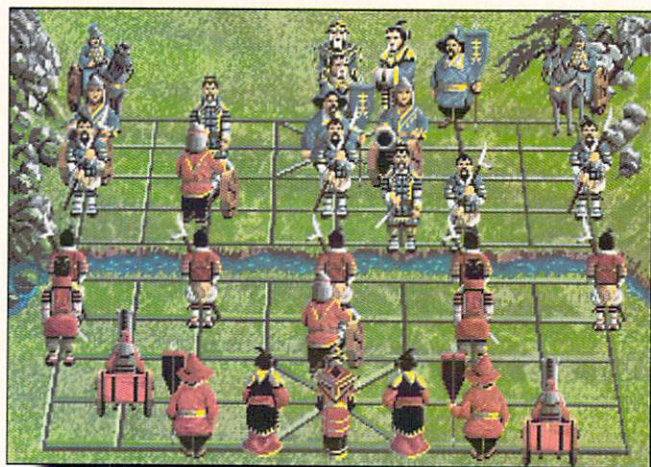
*Battle Chess II* is just as skillfully programmed as the original, and the animations are extremely well done, but I just can't work up any interest in playing it. It works fine as an extended demo if you set both sides as computer players, but it all has a hollow feeling. Part of the reason the original *Battle Chess* was so successful was because the pieces were familiar and we knew the characters; that's not the case with *Chinese Chess*. The Western version of chess is deeply ingrained in our cultural imagery, and the unfamiliar layout and



NASCAR racing with *Bill Elliott*.



Animated  
Chinese  
Chess in  
*Battle Chess II*.



pieces of the Chinese game don't have the same impact. Seeing a piece turn into a dragon and flame another piece doesn't have the same effect as seeing a rook from the original game turn into a monster and devour the queen. Benn and I discussed it at length and agreed that we would much rather have seen Interplay release a new animation disk for the original instead of changing the game itself. How about a comedy set, with Mae West the queen and W.C. Fields as the king? Now *that* would have piqued our interest.

*Battle Chess II* is a fine game in itself, and I would have been bowled over if I hadn't seen the original. As it is, it's one of those unfortunate ideas that probably seemed wonderful at the time, but just didn't work when it was put into practice.

## COMPUTER THUMB-TWIDDLING

The fine art of doing nothing is a tradition that goes back to the days when man's ancestors developed opposable thumbs and found that they could be satisfyingly rotated around one another to no good purpose. Time-wasting was born. We've come a considerable distance since then, but the art of fiddling around has come even further. Now we have computers to take the burden off our thumbs; we have software that's much more entertaining to play with than any digits, pedal or carpal. What I'm talking about here aren't games, but software of another sort altogether: programs that are utterly useless for anything but wasting a chunk of time, and preferably time that should have been used doing

something productive. They're things to relax with, ephemera, sort of like computer-age worry beads.

Most of the programs used in computer thumb-twiddling produce eye-candy, fleeting patterns and images that serve no purpose but are interesting to look at. The first, and still one of the greatest, of these is Dan Silva's *Polyscope*, which Commodore shipped with the Amiga 1000. It produces kaleidoscopic patterns on the screen and illustrates another point about this ephemeral type of software: its often hypnotic qualities. Ideally, thumb-twiddling software should require a minimum of interaction; it's best when you can sit back in your chair (or better, lie down) and veg out in front of the screen. Of course, not all software achieves this level of oblivion, nor should it. There are degrees of interaction and satisfaction.

Thumb-twiddling software doesn't necessarily have to be written for that purpose

alone; anything will serve, including productivity titles. Commercial or public domain, it doesn't matter as long as the goal of squandering a few minutes or a few hours is achieved. *Deluxe Paint* is one of the best time-wasters ever and probably the best Amiga entertainment title ever written. Megan plays with *ProPage*, which isn't everyone's idea of a good time, but illustrates the principle that thumb-twiddling is a very personal thing.

There are a few established traditions in using this type of software. First, never, ever save anything. I don't care how pretty the result of your labor is. If you save a file from something, you're doing something productive. Stop it right now! Second, and most important, you don't have to know how to use the software to waste time with it. Many of the titles in the list are mathematically oriented, but don't let that throw you. You don't have to know a single thing about math to waste time with them. Just look for examples included with the programs and alter them slightly to get the hang of how things work. If the program has alterable default settings, fiddle with them. Read the documentation only as a last resort. After all, we're not interested in learning anything, we only care about frittering our lives away. Finally, if you get bored with one thing, move on to another. Build yourself a library of these things so you'll have some variety in your time-wasting.

The numbers after the PD titles indicate which Fish disk they can be found on. Nearly all are also available on BBSs and online services as well. Some of the titles are so ancient we can't remember where they came from. Look around online and you'll find them. (Yet another good way to



A fleeting  
pattern from  
*Sizzlers*  
(FF #90).



waste some time!) The best way to ferret them out these programs is to search through *Aquarium* (the Fred Fish index program), or do a keyword search on the online services. Keywords to use include *graphics*, *music*, *demo*, *fractal*, *mandelbrot*, *julia*, and so on.

## LINES

There are any number of line-generating programs, including *SuperLines* (FF#243), *Hypno* (FF#297), *Klide* (FF#268), *Spliner*, *Kaleidoscope*, *Mackie* (FF#305), *Sizzlers* (FF#90), and many more. They use lines, boxes, and other shapes, including some spectacular spline-based ones, to create patterns on the screen. Most will change themselves, morphing through a series of different patterns as they swim across the screen. The best are *SuperLines*, which is the definitive of the Lines-type programs, and *Spliner* (written by Tom Rokicki, this is a new version of *Mackie*). There are also a couple of screen-blankers that will not only blank your screen, but your mind, too. *Pyro* (FF#199) is the best and explodes little multicolored skyrockets on your screen at a slow, majestic pace. There are also several variations on *Stars* (FF#118) and *Star-Blanker* (FF#308), which display moving starfields to watch if you're feeling otherworldly.

## SOLIDS

This category includes *Polyscope*, released to the public domain by Electronic Arts and available on BIX ([polyscope.lzh](http://polyscope.lzh)). As mentioned above, this early classic by Dan Silva will make patterns to keep you hypnotized for hours. It has never been updated and should be. Strangely, it runs under Kickstart 1.0 to 1.2, won't under 1.3 (unless FixHunked), and will again under 2.0. Also take a look at such treasures as *Worm* (FF#218), *Mondrian*, *Circles* (FF#304), *Blobs* (FF#15), *Tunnel* (FF#174), *HAMmmm2* (FF#239), *Dance* (FF#126), and variations on several of them. They operate for the most part like their line-based counterparts, but with the addition of solid shapes.

## SOME ASSEMBLY REQUIRED

While the following programs require some interaction to produce the unproductive effect we're looking for, they're well worth lolling back in your chair and wasting some time with. Be sure to have every-



An exotic fractal from Ronnie Johansson's *Fractals*.

thing you need for the next few hours within arms' reach.

*Deluxe Paint* is the champion here. Do some experimenting with the symmetry function, color cycling, and the move requester. I've wasted months fiddling with these. While it's not strictly in the spirit of time-wasting to save the results of any of your electronic doodling, you can put together slideshows of these screens and keep yourself vegged out for a few hours. (See the *Mindlight*, below.) If you're idling away a few hours with a paint program, don't forget that you can waste even more time by running the results through image processing software such as *Butcher* (Eagle Tree Software), *Pixmate* (Progressive Peripherals), or *The Art Department* (ASDG). After that, you can fiddle with the colors using *Doug's Color Commander* (Seven Seas).

This brings us to another matter. You can waste incredible amounts of time waiting for screens to render. Always keep in mind, though, that it is strictly forbidden to get up from your chair (recliner preferred) to do anything besides make a trip to the kitchen for refreshments. Correct time-wasting etiquette requires watching every moment of the rendering.

Some of the possibilities for this type of inactivity include rendering packages like *Sculpt*, *Turbo Silver*, *Real3D*, *Imagine*, and so on. By the way, remember to turn off any accelerators you might have installed so the screens don't render too fast. The biggest portion of this class of software is mathematical and includes all the fractal programs. There are scores, if not hundreds, some for exploring Mandelbrot-type num-

ber sets, some for generating fractal landscapes, and still others for rendering purely mathematical formulas. There are also many purely unique entries. When you dive into (perhaps sink into would be a better phrase) them, don't limit yourself to just the mainstream packages like *MathVision* and *VistaPro*. Some of the more obscure titles have odd functions and capabilities that can eat up weeks of your time. I'll list a few of the best and most unusual here along with a brief description:

*MathVision* (Seven Seas Software) - The ultimate mathematical fooling-around toy. Don't let a lack of mathematical knowledge put you off. Just load in a formula, change a number or two, and space out while the screen renders.

*FracGen* - basic fractal shape generator written by Doug Houck of *Seven Seas*

Anything by Terry Gintz - These include such PD titles as *PolySys* (FF#389), *ZPlot* (FF#389), *FractalLab* (FF#391), *Plot* (FF#389), *CPlot* (FF#392), and others. They offer different types of fractal and mathematical renderings that produce a variety of interesting patterns and images. The interfaces are fairly uniform, so after you figure out how to use one, the others are easy to learn.

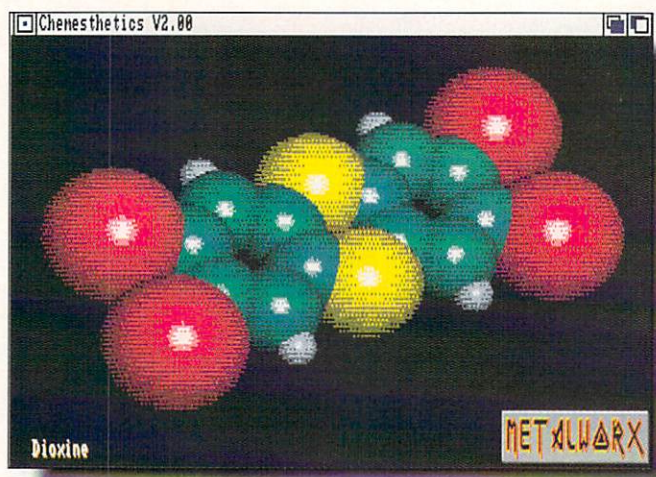
*VistaPro* (Virtual Reality Laboratories) - Generates landscapes based on real-world data or on fractal seed numbers. The screens take a satisfyingly long time to render.

*Roses* (Fish #345) - Generates sine roses (sort of like string-art).

*Scene Animator* (Natural Graphics) - This new landscape generating software from



Making molecules with *Chemesthetics*.



them together, and play them in a variety of ways: computer-composed music. *SeeHear* (FF#335) goes the opposite direction of *Pixound*, generating colorful spectrographs of sound samples.

## MISCELLANY

There are many programs of this sort which fall into no category at all. For example, take a look at *Chemesthetics* (FF#427), which renders pictures of molecules based on the atoms you specify. *Tess* lets you design tiles and put them together in various patterns. Another whole class of time-wasting software are Euro-pean demos. You can find them on all the online services, and though most are very large files, they will dazzle you with music and graphics.

Idle pursuits are their own reward. There's something about playing with software for its own sake that seems to get the creative juices flowing. Time-wasting isn't such a bad thing at all. Give some of these eyecatchers a spin and you'll see what I mean.

## SOURCES

**Electronic Arts**, 1450 Fashion Island Blvd., San Mateo, CA 94404, 415-571-7171

**Seven Seas Software**, 35 Cape George Wye, Port Townsend, WA 98368, 206-385-1956

**Virtual Realities Laboratory**, 2341 Ganador Court, San Luis Obispo, CA 93401, 805-545-8515

**Centaur Software**, 14040 Tahiti Way, Suite 528, Marina Del Ray, CA 90292, 213-542-2226

**Geodesic Publications**, PO Box 956068, Duluth, GA 30136, 404-822-0566

**Eagle Tree Software**, PO Box 164, Hopewell, VA 23860, 804-452-0623

**Progressive Peripherals**, 464 Kalamath Street, Denver, CO 80204, 303-825-4144

**ASDG**, 925 Stewart Street, Madison, WI 52713, 608-273-6585

**The Other Guys**, 55 N. Main St., Suite 301D, Logan, UT 84321, 801-753-7620

**Natural Graphics**, PO Box 1963, Rocklin, CA 95677, 916-624-1436

**MegageM**, 1903 Adria, Santa Maria, CA 93454, 805-349-1104

Brett Casebolt (*Scene Generator*, FF#155) is a complete reworking and includes some terrific animation tools you can spend months with.

Anything from MegageM - *HAMandel*, *ScapeMaker*, *FractalPro*

*Genesis* (Microillusions) - Similar to *VistaPro* and *Scene Animator*, it has even more functions and menu options to fiddle with.

*Fractals* (FF #371) - Written by Sweden's Ronnie Johansson, this fractal generator has, in addition to the standard Mandelbrot and Julia sets, several more exotic types.

*IceFrac* (FF #303) - This one grows fractal icicles up from the bottom of your screen.

*Cloud* (FF #216) - Makes fractal cloudscapes that will save you having to go outside and look up at the sky.

*ifs* (FF#321) - an Iterated Function System viewer which has considerable flexibility.

Another branch of mathematical software is concerned with Life as simulated electronically, cellular automata, and chaos. (Mark says he'll get around to writing about these someday.)

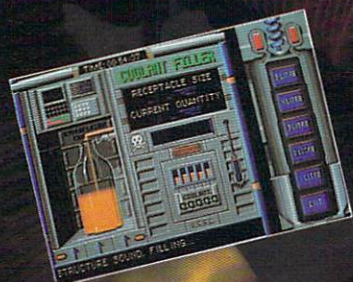
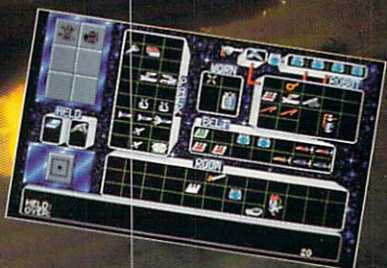
## ADDING SOUND

So far, I've only talked about graphics, but sound and music software also have fine potential for some serious wasted hours. For pure sound fiddling (pun intended), try The Other Guys' *E-Z FM Synthesizer*. It's an easy-to-use sound and

instrument generator that will not only entertain you, but also drive your family and neighbors to distraction. For hours. Sound digitizers and editors can also eat up a few hours. Make sure to try all the weird effects, too. From there, if you don't mind a slight stigma of productivity, you can use the instruments in EA's *Deluxe Music Construction Set*. Be careful here, though, not to actually produce any finished music. Just noodling around is the best way. Other music packages also offer of entertainment value, particularly *MED* (FF#476). While *MED* isn't pretty to look at, it is complicated enough that you can sit down to start making some music (or noise, in my case) and look up from the screen only to find that six hours have passed.

There is a hybrid category of time-wasting software that incorporates both graphics and sound. The ultimate is Visual Aural Animation's *Mindlight 7*. This hardware/software combination takes an incoming audio signal and generates patterns on the screen that are driven by the audio. This is the one thing I have wasted more time with than anything else. It's the ultimate video wallpaper. Unfortunately, the *Mindlight* is no longer being produced, but Geodesic Publications is working on a new version called *LightShow*. Another title in this category is from Hologramophone (available from Centaur Software). *Pixound* will take any IFF screen, analyze the RGB values, and play them as music. It will work with both internal Amiga sound and MIDI. *Hyperchord*, another of Hologramophone's titles is also a good timewaster. It's basically a riff processor that lets you generate random or user-designed riffs, put





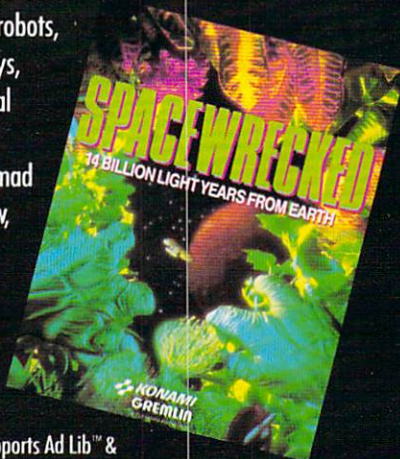
## The New Crew Has No Respect.

A routine biological survey mission into the Orion Galaxy became a space nightmare. The biological specimen locks snapped open the instant the fleet's 20 ships time-warped into the eye of the exploding Wolf-Raert nova. The lab's bizarre cargo of 20 alien creatures emptied within minutes, taking control. A desperate SOS was sent out, just as fuel and navigation systems faltered.

The ships drifted along for a decade in hopeless orbit when the SOS finally reached Earth. Most of the human crew had years ago opted for cryogenic freeze. Others still alive, suffer from radiation poisoning.

You must repair and return the ships to earth using what you find aboard....

6 programmable robots, weapons, pass keys, maps and chemical coolant. Your only obstacles are the mad crew, the new crew, and time. You are Spacewrecked.



**KONAMI**  
**GREMLIN**  
A Publishing Partnership

Spacewrecked™ 14 Billion Light Years from Earth is a trademark of Konami Inc. Konami is a registered trademark of Konami Co., Ltd. Gremlin is a registered trademark of Gremlin Graphics Software Limited. © 1991 Konami Inc. © 1991 Gremlin Graphics Software Limited. All rights reserved. Konami (708) 215-5111.

Available Fall 1991 for  
MS-DOS & Amiga. Supports Ad Lib™ &  
Roland™ Sound Boards.

Circle #103 on the Reader Service Card

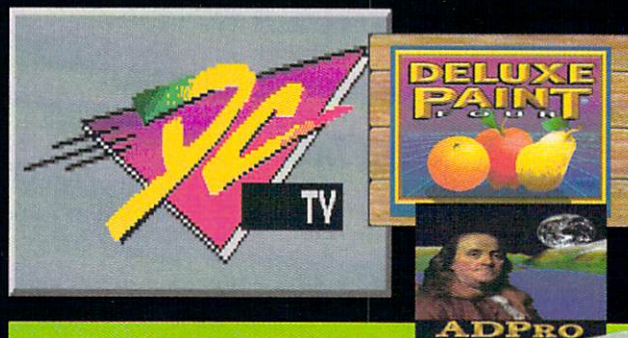
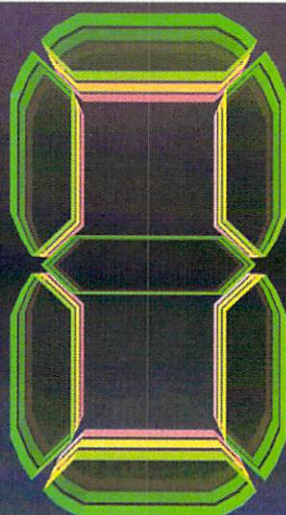




## 1st PRIZE (\$7,000 VALUE)



Abacus	Amiga Graphics Inside & Out
Accolade	3D Graphic Programming in BASIC
AlohaFonts	C for Advanced Programmers
ASDG	Elvira
Blue Ribbon	Ishido
Broderbund	eclips 1 & 2
Central Coast	Art Department Professional
Commodore	Bars & Pipes
Devware	Typhoon Thompson
Dr. T's Music	Quarterback
Electronic Arts	Quarterback Tools
Gold Disk	2.0 ROM Chip Key Chain
GVP	Rare Amiga 'Boing' Logo Plates
ICD	Top 25 Devware PD Picks
Interplay	KCS 3.5
IntraCorp	Deluxe Paint IV
Jumpdisk	HyperBook
Kara Graphics	Professional Draw 2.0
Maxis	Professional Page 2.0
MicroSearch	Scala
New Horizons	AdSpeed
NewTek	Battle Chess II
Progressive	Big Deal
Peripherals	Bill & Ted's Excellent Adventure
Psygnosis	1 Yr Subscription to Jumpdisk
ReadySoft	PowerPacker Professional
Right Answers	Kara Fonts - Toaster Fonts 1 & 2
SoftWood	SimCity
SSI	SimCity Graphics Sets 1&2
Supra	Material Textures Library vol. II
TTR	ProWrite
Vidia	Video Toaster
Virtual Reality	DiskMaster II
	IntroCADD
	PIXmate
	Amnios
	Lemmings
	Dragon's Lair I & II
	Space Ace
	Team Yankee
	The Director Version 2
	Clip Art: Animals / People
	Clip Art: Classic / Collectors
	Electric Thesaurus
	Proper Grammar
	Maverick V3 for the Amiga
	SupraModem 2400ZI Plus
	Brigade Commander
	MRBackup Professional
	RXTools
	Teachers Toolkit
	Workbench Management System
	Amiga Graphics Reference Card
	Vista Pro



## 2nd PRIZE (\$3,600 VALUE)



Abacus	Amiga Machine Language
Accolade	Amiga Printers Inside & Out
ASDG	Making Music on the Amiga
Blue Ribbon	Hoverforce
Broderbund	Art Department Professional
Commodore	Bars & Pipes
Devware	Where in Time is Carmen
Digital Creations	Sandiego?
Dr. T's Music	Rare Amiga 'Boing' Logo Plates
Electronic Arts	Top 25 Devware PD Picks
Gold Disk	DCTV
IntraCorp	Copyist Pro/DTP
Kara Graphics	Deluxe Paint IV
MicroSearch	ShowMaker
New Horizons	Lord of the Rings
Psygnosis	Big Deal
ReadySoft	Bill & Ted's Excellent Adventure
SoftLogik	Kara Fonts - Headlines
SSI	ChromaKey
Vidia	DesignWorks
Virtual Reality	Amnios
	Lemmings
	Dragon's Lair I & II
	Space Ace
	Team Yankee
	PageStream
	PageStream Fonts & Forms
	Maverick V3 for the Amiga
	Amiga Graphics Reference Card
	Distant Suns 4.0

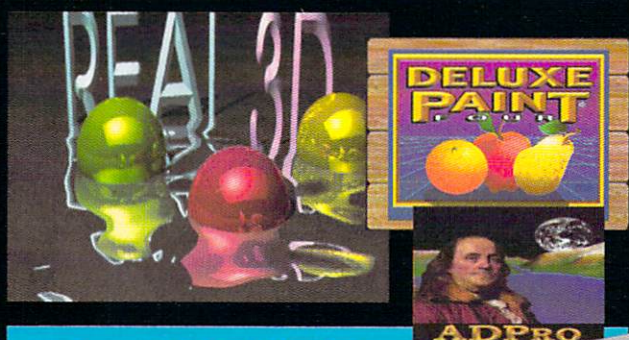


# **.info turns EIGHT this month!**

## **And to show our thanks for your support, we're giving away these fabulous prizes worth over \$12,000!**

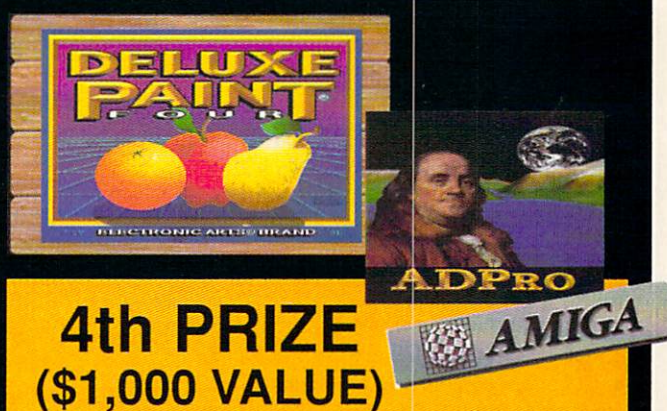


Giveaway rules: No purchase necessary, 2 ways to enter: 1) Subscribing or renewing a subscription to .info using the specially marked subscription card included in this issue (by the giveaway deadline) will automatically enter participant in the giveaway. 2) Send a 3X5 card with your name, address, and phone number to ".info 8th Anniversary Giveaway / 705 Hwy. 1 West / Iowa City, IA 52246." All entries must be received no later than November 15, 1991 to be eligible. Winners will be drawn at random. The odds of winning will depend on the number of entries received. Taxes and duties on all prizes are the sole responsibility of the winner. Prizes are not transferable, nor are they redeemable for cash value. All federal, state, and local laws apply. Void where prohibited by law. Employees of .info Publications and their families are not eligible to enter. .info is not responsible for lost, misdirected, or late mail. Prizes listed have been donated by the manufacturers and distributors listed. Distribution of specific prizes listed is subject to delivery to .info by participating manufacturers and distributors. No compensation shall be made to winners for any products not available by 30 days after the contest deadline due to failure of third parties to deliver same to .info in a timely manner or through any other cause not reasonably in .info's control.



### **3rd PRIZE (\$2,200 VALUE)**

Abacus	AmigaDOS Inside & Out
Accolade	AmigaDOS Quick Reference Guide
Activa	Best Amiga Tricks & Tips
ASDG, Inc	Gunboat
Broderbund	Real3D
Commodore	Art Department Professional
Devware	Wings of Fury
Dr. T's Music	Rare Amiga 'Boing' Logo Plates
Electronic Arts	Top 25 Devware PD Picks
Gold Disk	Phantom
New Horizons	Deluxe Paint IV
Psygnosis	PageSetter II
	Flow
	Amnios
	Lemmings
Saxon	Saxon Publisher 1.2
	Saxon Script Professional
Vidia	Amiga Graphics Reference Card



### **4th PRIZE (\$1,000 VALUE)**

Abacus	Amiga C for Beginners
	Amiga for Beginners
Accolade	AmigaBASIC Inside & Out
ASDG	Star Control
Broderbund	Art Department Professional
Commodore	Wolfpack
Devware	Rare Amiga 'Boing' Logo Plates
Dr. T's Music	Top 25 Devware PD Picks
Electronic Arts	X-OR
Gold Disk	Deluxe Paint IV
Vidia	TransWrite
	Amiga Graphics Reference Card

### **25 Runners - Up**

Will each receive a Vidia Amiga Graphics Reference Card, .info pocket-protector, and a box of Dweebs®



# Archive Your Disks: Two Backup Programs

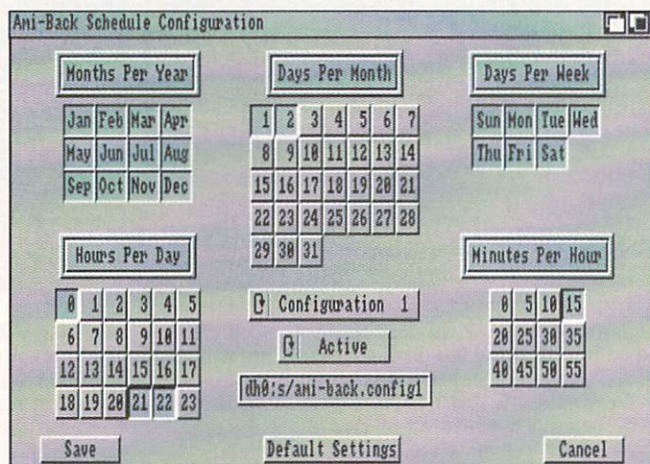


here are two primary axioms in the computer world. One of them is: Stuff expands to fill available space. If you have a floppy-based system, that axiom means that you can either risk being drowned in a sea of disks, or you can buy a hard disk drive. Once you have a hard disk drive, however, you run into Murphy's Law: Whatever can go wrong will, when you least expect it. Hard drives are a Murphy disaster waiting to happen: large amounts of data concentrated in one area - especially if it's vital data - seems to increase the odds of having someone trip over the power cord. If you absolutely, positively *have* to have the data, something terrible will happen.

I can't emphasize this enough: BACK UP YOUR DATA! Regular backups will add years to your life. If you're worried that you'll spend those extra years backing up your drives, let me put your mind at ease. The programs I tested for this column - *Ami-Back* and *FlashBack* - were fast, convenient, and reliable.

## COMMON GROUND

Before I introduce the players, I'd like to mention the operations both have in common. Both will do full backups, archival backups (only files which have been added or changed since the last backup), and selective backups and restores. Both will backup to floppy disks, SCSI tape, and hard



The *Ami-Back* schedule configuration panel.

drives, and both feature a verify option. And both perform "fast-disk" floppy backups. In this mode, AmigaDOS is bypassed and data is written to the disks on a track-by-track basis. Both programs log their results, including errors, to an ASCII file. And, lastly, both programs sport the spiffy 3D look that heralds the coming of Workbench 2.0.

## Ami-Back

*Ami-Back*, from Moonlighter Software Development, comes in two flavors: *Ami-Back13*, for Workbench 1.3, and *Ami-Back20*, for Workbench 2.0. These comments apply to the 1.3 version. When you first boot *Ami-Back*, you'll be greeted by three gadgets: Backup, Restore, and Quit. Additional options are available from the menu. *Ami-Back* gets its defaults from configuration files. If you always back up the same partition and always use the same options, you can just click on Backup or Restore and go. If you need to change the defaults, the menu options will summon the appropriate panel.

One of the Backup options enables you to perform an Image backup. In this mode, the entire contents of a partition are copied, byte-by-byte, to the backup medium. If you have a non-AmigaDOS partition such as *AMax*, this option simplifies backups for

you. *Ami-Back* allows you to define exclusion filters. If, for example, you don't want to backup any files with an '.lzh' suffix, just add '\*.lzh' to the exclusion filter list. In addition to the normal incremental backup mode, *Ami-Back* allows you to backup files added *after* a certain date. In Selective backup mode, you can choose to include *or* exclude the files you select. *Ami-Back* also gives you the option to perform an AmigaDOS backup. This saves the backed-up data as one large AmigaDOS file.

Backing up to floppy disks is a smooth operation with *Ami-Back*. Disk insertion and removal is automatically sensed, so if you have more than one drive you can always stay one step ahead of the operation. *Ami-Back* allows you to backup in either fast disk mode or in AmigaDOS mode. A handy timer shows you not only elapsed time, but an estimate of the time remaining. If you're backing up to something other than floppies, you'll know if you have time to get that snack.

When it's time to restore your backed-up files, *Ami-Back* gives you a Compare Information option to save you from restoring duplicate files. There are five comparison items: Filename, data, time and date, protection bits, and comment. If you'd like to keep duplicate files without writing over the original, *Ami-Back* includes an option to rename duplicate files.

**Ami-Back**



**\$79.95**

**Moonlighter Software  
Development, Inc.**

3208-C East Colonial Drive Suite 204  
Orlando, Florida 32803  
(407) 628-3005



## CHECK THE SCHEDULE

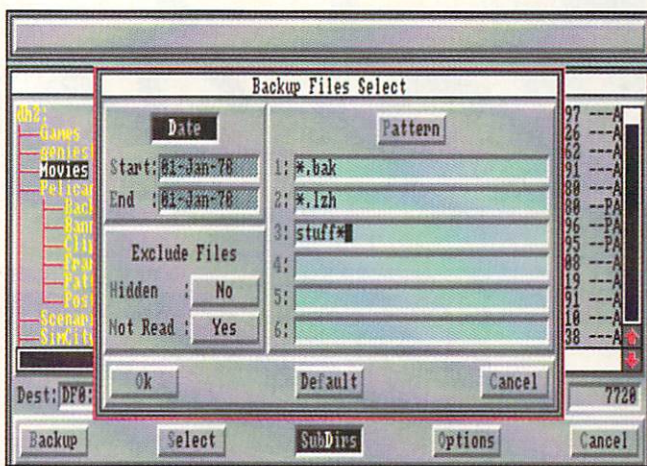
One of the more interesting options available with *Ami-Back* is the ability to schedule backups. You can define as many as ten different backup schemes, each with its own backup schedule. If, for example, your DH1: partition gets a lot of activity, while DH0: is fairly dormant, you can have *Ami-Sched* (a companion program to *Ami-Back*) back up the data in DH1: once a day, while backing up DH0: only once a month. *Ami-Sched* lets you set the hours of the day, the days of the week and month, and the amount of time each hour that it will backup your data. If you have the appropriate device - streaming tape or Syquest, for example - *Ami-Sched* looks like a painless way to insure your data.

## FlashBack

The opening screen for *FlashBack* from Advanced Storage Systems presents you with the primary options: Backup (or restore) Image or File, and Load or Save Configuration. There's also a handy Help button. Once you've selected the backup method, you'll be taken to the Options panel, where you specify the source (where the data's coming from) and the destination. Any mounted device can be specified as the destination, including a file in RAM: (although not RAM: itself). The Options panel lets you select a full or archive backup, as well as whether existing files will be overwritten, and whether the archive bits will be set or ignored.

Once you've set your options, *FlashBack* reads the source device, builds a catalog, and displays a new screen. If you've selected File backup mode, the directories and subdirectories from the source device will be displayed in a visible tree, in one of two file windows. The other window displays the files in a selected directory. This screen allows you to select files to be excluded from the backup, and gives you access to the Backup Files Select panel. This panel lets you define certain parameters that will determine which files are backed up. The Date gadgets let you specify a start and end date; files created before or after these dates are not backed up. You can also use wildcards to define what kinds of files are included. If you entered '\*.lzh' as one of the patterns, all files with the suffix of '.lzh' would be selected for backup.

Backing up to floppy is as painless with *FlashBack* as it is with *Ami-Back*. Thanks



Selecting file patterns in *FlashBack*.

to the automatic disk insertion/removal detection, you can stay one floppy ahead of the process. Restoring the data is quick and easy, too. The Restore panel lets you determine whether directories will be created, whether archive bits will be set, and whether you'll get a warning when a file is about to be overwritten. The Copy Files option enables you to restore only files that exist on the destination drive, in case you don't want deleted files to reappear. Like the Backup operation, Restore (once the catalog is generated) brings up a display of the directories and subdirectories to be restored. The options are the same here as they are for backup - you can manually exclude directories and/or files from the restoration process.

In the course of testing *FlashBack*, I was able to investigate its error-handling capabilities. I purposely used ancient, much-used floppies for the backup, and I was rewarded (?) with a few unreadable files. *FlashBack* gave me the option to retry the read (which failed, of course) and then allowed me to abort the restoration. I was able to complete the restoration by excluding the faulty files and re-starting the restore process. Don't try this at home, though - if you're going to back up to floppies, invest in a fresh batch.

## WHAT'S IN A TAPE? LET ME COUNT THE WOES

*Ami-Back* supports SCSI tape drives two ways. The first way is through SCSI-direct commands. If your tape drive understands these commands, you don't need a tape handler. My drive, of course, doesn't. After

consulting with the program's author, I managed to convince my unit - a 3M 40-meg drive - to talk to *Ami-Back* through *BTN*, a public domain tape handler. *FlashBack* requires the services of a tape handler. So far, it doesn't work with *BTN*, but I've contacted the programmer and hope to have better news to report next month.

## HOW DO THE BACKUPS STACK UP?

Both *Ami-Back* and *FlashBack* are quality programs. They're easy to use, and they get the job done quickly, with a minimum of fuss. Although I gave both of them the same rating, *Ami-Back* had a few advantages over *FlashBack*. The automatic scheduling utility is one, although you can set up a script to run *FlashBack* automatically. Another advantage is the more flexible approach to devices like tape drives. Note that each program has a few features that the other doesn't. That might make the difference in your decision. You won't go wrong with either one, though.

### FlashBack



\$79.00

Advanced Storage Systems  
14540 East Beltwood Parkway  
Dallas, Texas 75244  
(214) 702-9191



# ProVisions

## Contents

- ▲ **Graphics . . . 38** A RoundUp of Amiga Paint Programs.
- ◆ **MultiMedia . 43** CDTV plays and displays CD+G disks.
- **Audio . . . . . 46** How to add music to your productions.
- **Video . . . . . 48** Do your own TV forecast with *Choma Key*.

ProVisions

## GRAPHICS

by Brad Schenck

**W**hile the availability of 24-bit composite video and other advanced display devices is the most exciting of the recent developments in Amiga graphics, the standard Amiga graphics modes have certainly not gone away. If you're new to the Amiga, it's most likely that you're working with these stock graphic displays. Long-time users may also be waiting out the inrush of new display enhancers to the market before deciding which of them is best for their particular use.

This month, we'll be taking a look at paint software that's available for the Amiga's standard display modes, with a comparison of the programs' features. Keep in mind that any comparison is certain to overlook the finer points of each product. As always, you should, if possible, evaluate a program at your local dealer, discuss your choice with other users, and read specific reviews if they're available. Lastly, remember that reviewers like me are just human beings like every-

one else, and our conclusions may be based on personal prejudices, not objective fact.

### ADVANTAGES

If you are just beginning to work with paint software, you'll find that computer graphics automatically offer many advantages over traditional media. The simple presence of an 'Undo' feature may be the most empowering thing you'll notice at first. 'Undo' and the ability to

save multiple versions of a project to disk free the artist to experiment widely with techniques. I know from my own experience that my skills improved far more rapidly once I had that freedom to experiment without ruining the work in progress.

The fact that the images are made using a computer gives you abilities very similar to a writer working with wordprocessing software - or an accountant, for that matter, working with a spreadsheet. It's a simple matter to copy one area of an image and place it elsewhere. Take this a step further and you can use that 'brush' to paint an entirely new shape, shrink or expand it, or import it into a different program to modify it in untold ways.

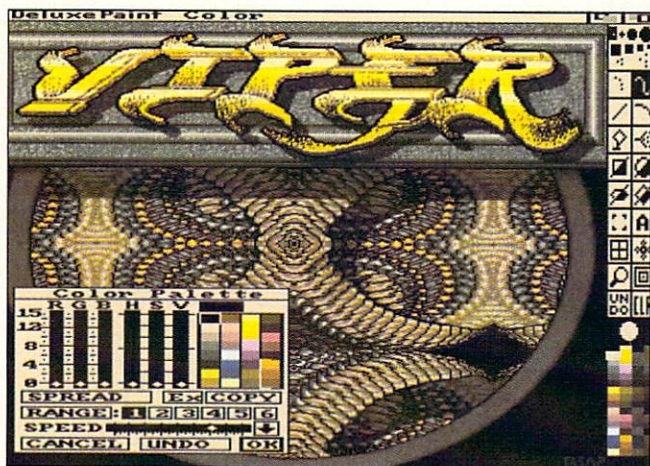
None of these features replaces the artist or his artistic vision. It's true that they may be used to quickly produce a rough version of a good effect, which is laziness; but it's also true that these features can and should be used to *simplify* the artist's work, letting the computer do tedious and repetitive tasks that would tax a human's patience. As I pointed out before, that is exactly what wordprocessing software does for a writer.

### BASICS

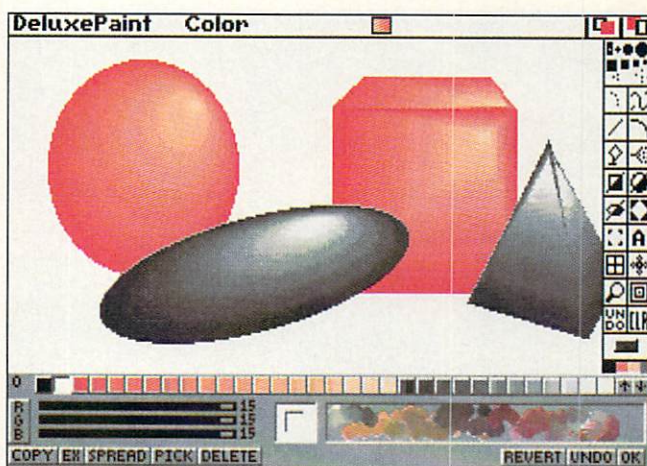
The Amiga's standard display modes are first identified by their *resolution*, or dimensions in *pixels* (the tiny dots of color that make up an image). *Low resolution* screens are 320 pixels wide; *high resolution* screens are 640 pixels wide. Either resolution may be *interlaced*, with a screen height of 400 pixels, or *non-interlaced*, 200 pixels high. In addition, a screen may be *overscanned*. This means that it extends beyond the normal screen borders, filling the entire monitor. Overscan sizes vary, but a

Join Brad as he  
presents a  
RoundUp of the  
top Amiga paint  
programs.





*Deluxe Paint III*, the definitive Amiga paint program from Electronic Arts.



*Deluxe Paint IV*, with many new features including HAM mode, will be available by the time you read this.

common one for high resolution interlaced screens is 736x480 pixels.

In the 'normal' screen modes, a low resolution screen may have up to 32 colors out of a palette of 4096. A high resolution screen can have up to 16 colors out of 4096. Colors are mixed by adjusting the amount of *Red*, *Green*, and *Blue* that define them - these RGB values represent the primary colors in computer graphics, which is a bit of a shock at first to artists accustomed to mixing red, blue, and yellow.

Low resolution screens can also use two additional graphic modes: *extra halfbright* and *HAM* (Hold-and-Modify).

Halfbright images still offer 32 'mixable' colors, but add 32 additional colors that are exactly half the brightness of the hues in the first 32. These limited extra colors are especially useful in shading effects. Keep in mind when you work in halfbright that those darker shades will tend toward grey, and make the first 32 colors relatively bright.

In HAM mode you can use any number of the 4096 possible colors in a single image. Before you decide to work only in HAM, you should be aware that it has technical side effects that cause some combinations of color to 'fringe' to the right of the area you're painting. For this reason it's often practical to do the layout for a HAM image in fewer colors, and then import the layout to a HAM paint program for the more painterly work. While the sheer number of colors available in HAM is very attractive, you may find that it's not appropriate for many applications, particularly those involving text displays or in which you need smaller pixels for a smoother appearance. Working in HAM is often more frustrating than the 'normal' modes because of its unique limitations.

*Antialiasing* is a technique in which diagonal or

curved lines are smoothed to remove the jagged stairstep effect that results from drawing with rectangular pixels. Intermediate colors are applied to the jagged edges to smooth the transition between one color and another. The smaller your pixels are (as in high resolution), the less noticeable these 'jaggies' are.

## DELUXE PAINT

*Deluxe Paint* has been with us for almost as long as there have been Amigas to run it on. At the time of writing the most recent version is *DPaint III*, though *DPaint IV* (previewed in .info #40) will be available by the time you read this.

*DPaint's* user interface has the elusive quality of transparency that is an ideal for software. The mechanics of the program almost never interfere with its use, and it rewards experienced users with shortcuts and advanced features. *DPaint III* added powerful animation features. The only thing most users missed at that point in the program's evolution was HAM painting, which is coming in *DPaint IV*.

While other products listed have brush warping abilities that allow the artist to simulate perspective effects, *DPaint* is alone in offering a true perspective drawing mode in which a movable vanishing point constrains perspective effects in a realistic way. On the whole, *DPaint's* powerful array of features have made it a favorite among artists. If the support for HAM mode is as well designed and implemented as one expects from *DPaint*, the new version may set a new standard.



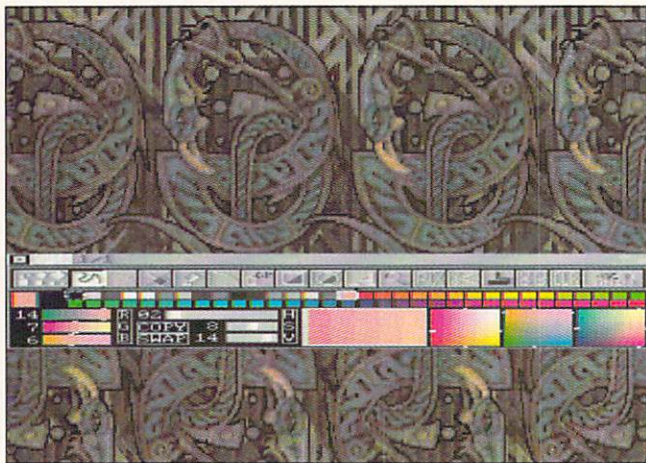
***DPaint's* powerful array of features have made it a favorite among artists.**







*Deluxe Photolab Paint, until Deluxe Paint IV the only paint program to handle both standard and HAM.*



*Spectracolor, an update of the HAM paint program Photon Paint from Aegis/OXXI.*

## DELUXE PHOTOLAB PAINT

Although it hasn't been updated since its introduction in 1988, this suite of programs - now bundled together with *Deluxe Video III* - has a good deal to offer. Until the advent of *DPaint IV*, *Photolab* remained the only paint software that works in every standard Amiga graphics mode.

The *Photolab* package includes *Paint*, *Posters*, and *Colors*, which respectively are painting, printing, and image processing programs. *Photolab Paint* doesn't offer any animation features, but its painting tools are quite useful. Like a few of the other listed products, it features not only 'Undo,' but 'Redo' - a function that repeats the last action, allowing the artist to alter some paint settings and try again, or overlay the area last worked on. That's a very useful feature. A unique pair of functions is *Photolab*'s 'Save From' and 'Load At.' These allow the artist to clip a rectangular part of an image and load it to a precise location in

another, and has great potential when working with animation frames.

The program is beginning to show its age, but still holds up very well. It doesn't offer as much in the non-HAM modes as *DPaint* does, but it does do all the graphic modes and is credible enough as an all-in-one paint package. It deals well with superbmap images (that is, images much larger than a displayed screen, although when working on an overscan picture the entire image is not visible at once - the artist has to scroll around to work on the edges.

## SPECTRACOLOR

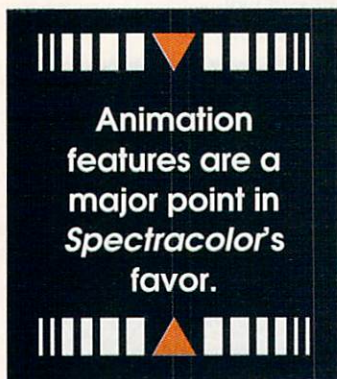
Those of you who've been using Amiga software for a while will recognize *Spectracolor* as an improved version of Microillusions' *Photon Paint 2*. *Photon Paint* was one of the earlier HAM-only paint programs, and included some basic features for working with compressed ANIM files. Now *Spectracolor* builds on those capabilities with new paint and animation functions (for a full review, see *info* #43).

*Spectracolor* still works only in Hold-and-Modify mode, and most of its painting tools are designed to take full advantage of that. It offers minute control of painting both for foreground and background color, and has several unique tools (like pantograph) that none of the other products include. Its stencils are limited to a single filled shape, unfortunately, but keep in mind that the other HAM-only programs don't offer stencils at all (except the new *DPaint IV*). There are some other nuances that don't show in our comparison chart: for example, *Spectracolor* will accept and preserve unusual screen shapes for ANIM files, like 'letterboxed' animations, which may be overscanned horizontally but are less than a screen tall.

While animation features are somewhat outside the scope of a paint software comparison, these are a major point in *Spectracolor*'s favor. Its paint features are also quite good and it's a program well worth looking into if a HAM-only paint program will suit your needs.

## DIGIPAIN III

Despite aggressive marketing that compares this program to *DPaint*, *DigiPaint III* is a relatively simple paint system for working only in Hold-and-Modify mode. *DigiPaint*'s original incarnation was the first HAM paint





# AMIGA PAINT PROGRAM COMPARISON CHART

	DPaint III	DPaint IV	Spectracolor	Photolab Paint	Digipaint III	Graphics Workshop
Company	Electronic Arts	Electronic Arts	Oxxi/Aegis	Electronic Arts	NewTek	Holosoftware Technologies
Rating	☆☆☆☆☆	PREVIEW	☆☆☆+	☆☆☆☆	☆☆☆+	NOT RATED
Price	\$149.00	\$179.00	\$149.95	\$149.00	\$99.95	\$100.00
Low Res/32	Yes	Yes	No	Yes	No	Yes
High Res/16	Yes	Yes	No	Yes	No	Yes
Halfbright	Yes	Yes	No	Yes	No	Yes
HAM	No	Yes	Yes	Yes	Yes	No
Interlace	Yes	Yes	Yes	Yes	Yes	Yes
Overscan	Yes	Yes	Yes	Not Displayed	Not Displayed	Yes
Image Size	To Memory Limit	To Memory Limit	To Overscan Only	To Memory Limit	To 1024 by 1000	To 1024 by 1024
Perspective	Yes	Yes	No	No	No	No
2 1/2 D Brush	Yes	Yes	Yes	No	No	Yes
Brushes	1	Multiple	1	1	2	Multiple
Brush Painting	Yes	Yes	Yes	Yes	No	Yes
Pattern Fill	Yes	Yes	Yes	Yes	Yes	Yes
Brush Warping	Yes	Yes	Yes	Yes	Yes	Yes
Stencil	By Color	By Color or Area	By Area	No	No	By Area
Antialias	Yes	Yes	No	Yes	Yes	Yes
Gradient	Yes	Yes	Yes	Yes	Yes	Yes
Rub-Through	No	No	No	No	Yes	No
Shadow	Yes	Yes	Yes	No	No	Yes
Transparency	No	Yes	Yes	Yes	Yes	No
Blur/Smooth	Yes	Yes	No	No	Yes	No
Redo	No	No	Yes	Yes	Yes	No
Color Cycling	Yes	Yes	Yes	No	No	Yes
Animation	Yes	Yes	Yes	No	No	Yes
ANIM Files	Yes	Yes	Yes	No	No	Yes
ANIM Brushes	Yes	Yes	Yes	No	No	Yes
Fonts	Yes	Yes	Yes	Yes	Yes	Yes
Colorfonts	Yes	Yes	Yes	No	No	No
Printing	Yes	Yes	Yes	Yes	Yes	Yes
AREXX	No	No	No	No	Yes	No
Other Software	ANIM Player	ANIM Player	None	Image Processing; 'Poster' printing	Image Processing	Animation player (non-ANIM)

## Addresses

*Electronic Arts*  
1450 Fashion Island Blvd.  
San Mateo, CA 94403  
415-571-7171

*Oxxi*  
PO Box 90309  
Long Beach, CA 90809  
213-427-1227

*NewTek*  
215 East 8th St.  
Topeka, KS 66603  
800-843-8934

*Holosoftware Technologies*  
1637 E. Valley Parkway,  
Suite 172  
Escondido, CA 92027  
619-747-0663





NewTek's *DigiPaint III* HAM paint program with menus by Jim Sachs.



*Graphics Workshop* from HoloSoft Technologies.

program, which underwent quite a lot of changes in the update to version III. It has a reasonable array of painting tools (with the remarkable exception of a straight line) and good control over graduated transparency in its fill modes. Color gradients are a bit less sophisticated, but again, quite usable.

Like *Photolab* and *Spectracolor*, *DigiPaint* has a 'Redo' feature that is invaluable. Also like *Photolab*,

overscanned images can be edited, but not while viewing them in full over-scan - the artist must scroll the image to see the edges of the picture. While the artist can pick up and stamp brushes on the image, it's not possible to paint freely with a brush as one can in most paint software.

The single most exciting feature in *DigiPaint* is its ARexx port, which none of the other programs offer. This makes a wide variety of applications possible, since other programs can

assume full control over *DigiPaint*; that partly overcomes its lack of ANIM support, since third-party products (or user-written programs) can add animation features through ARexx. That may be of little immediate benefit to the artist, but it's a strong advantage for the program in the long run.

## GRAPHICS WORKSHOP

This non-HAM package is basically the reverse of the others listed, since it's essentially an animation program with an array of paint features. While the program supports the compressed ANIM file format, it stresses its own realtime brush animation features, in the same vein as Gold Disk's *Moviesetter*.

Strong points are a very useful antialiasing tool and (due to its brush animation functions) good control over the placement and manipulation of multiple brushes.

The reason *Graphics Workshop* is not rated in our chart as the others is not a limitation of the program, but of the reviewer. I simply haven't worked with it enough to rate it fairly.

Based on a little experience with it and its selection of features, I do recommend that artists take a closer look at the program, which is now at version 1.1 to correct a few problems in the original release.

## ABOUT THE COMPARISON CHART

In a chart like this, oversimplification is a real threat. As you look over the lists of features, bear in mind that the programs approach problems in different ways: often it's possible to get an effect by using one or more tools, so that things which aren't directly supported are still possible.

If your main needs are for video and animation, you should place special emphasis on color and animation features. If your work is going to print or to slides, resolution may be more important to you and you should look for tools that allow you to work on superbitmap images.

The difference between 'Perspective' and '2 1/2 D Brush' is the presence of a constraining vanishing point for true perspective drawing. A '2 1/2 D Brush' may be rotated on three axes to simulate a 3D effect. This is what most software offers as 'perspective' but I've had to separate the two for reasons of clarity. 'Other Software' lists bonus programs included with the product which enhance its capabilities.

**Note:** the images used in this article are shown for illustrative purposes; they were not necessarily created with the software shown.

The single most exciting feature in *DigiPaint* is its ARexx port



On the back of CDTV's fancy sales package you'll see a box that reads: "It's a CD Player Too! Plays all standard audio CDs in stereo (8x oversampling) and a growing library of CD+Graphics (CD+G) discs from major artists."

As an *.info* reader, you already know CDTV can play regular music CDs, controlled using a slick graphical interface designed by Jim Sachs and Leo Schwab. But you might not know about CD+G. In fact, even though you may have never seen any CD+G graphics, there's a chance you might already own one or more of these discs without even knowing it. The ability to play and display CD+G discs is one of the most intriguing and least talked-about aspects of CDTV.

Way back in the dark ages (1983) JVC developed and released the CD+G data specs. CDs with graphical information encoded alongside music, per the CD/CD+G standard, had to be 100% compatible with all non-CD+G CD players or decks. It's been part of, and one of the best-kept secrets about CD technology ever since. This probably has more to do with the lack of CD+G capable players and decks than anything else. Another self-fulfilling prophecy: few decks, few CD+G discs. The advent of CDTV could well spell a renaissance in CD+G.

The CD+G format is a screen of 288x192 pixels made up of 12x6 pixel "blocks." Sixteen colors out of a palette of 4096 (or 16 shades of gray) can be displayed at once. On first blush, this might sound like a fairly crude resolution, but don't pre-judge before you see what it can do when talented artists are driving it. The graphics can be slow-scrolled, faded in or out, dissolved onto the screen in various wipes and patterns (including wiping multiple regions of the screen with different patterns simultaneously) and color-cycled.

CD+G discs cost the same as regular CDs, and the graphics on them in no way limit the amount of music



+G graphic from Jimi Hendrix's "Smash Hits."

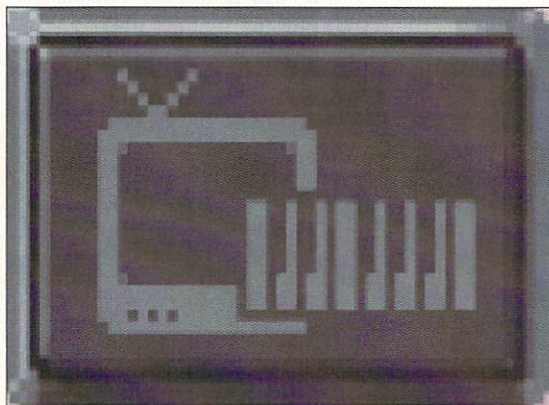
they can hold, nor the music's audio quality. If you're CD shopping, I'd suggest you pick up a few. Even if you don't own a CDTV yet, you'll be all set when you or your friends take the plunge.

## PLAYING CD+G

To play a CD+G disc on CDTV, you simply insert the disc into a caddy, shove it into the player, and, when the CDTV audio interface appears, move the cursor to the lower right hand icon - the one that has a television set and a piano keyboard on it. (This same button also launches CD+MIDI discs, but that's a whole 'nuther story). When you click that icon, the player screen vanishes and is replaced with some pictograms of CDTV's front panel buttons (play, stop, etc.).

Unfortunately, you lose all the nifty disc-controlling features of the pretty player interface to get to CD+G graphics, but you can still use your remote or the buttons on the CDTV itself to navigate the disc's tracks. The deck's front panel blue LED display will show you which track you're watching/listening to, but its clock stays on the current time of day. If you pause during play, the graphics tend to break up or vanish, but reappear when play mode is engaged again.

So what kind of graphics will you find on CD+G discs? These pages have some samples I captured with a CDTV and a Time Base Corrector (to freeze the graphics) from the discs I own, which are commented in the



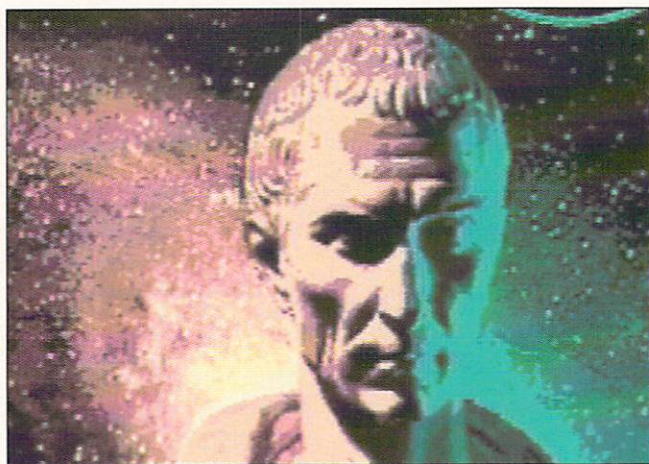
CDTV's '+G' and '+MIDI' icon.



Harv flips over  
CD+G (CD audio  
discs with  
graphics),  
playable  
on CDTV.







A still from "The Planets", conducted by Zubin Mehta.



From Little Feat's CD+G disk "Representing the Mambo."

lists below. These static images really don't do justice to the swirling, constantly evolving montages you'll find on CD+G discs. Some of them are incredible Multimedia experiences. Many discs have song lyrics, some in multiple languages.

### FINDING CD+G

Digging up information about CD+G (never mind finding the discs themselves!) became an exercise in frustration. There's no list of current discs packed with CDTV.

Most record store personnel I dealt with locally were woefully ignorant about the CD+G titles available (there are close to 50 discs now), even in their own shops. In visiting half a dozen local record stores, ranging from Mom'n'Pop holes-in-the-wall to huge chains (Tower, The Wherehouse, Music+), not one clerk, or manager for that matter, knew what I was talking about when I asked for CD+G discs. My shopping turned into a scavenger hunt - digging through the usual bins of thou-

sands of "long boxes" looking for a special yellow CD+G sticker affixed to a scant few titles.

Further, none of the stores had a CD+G capable player deck of any kind. Here's a golden opportunity for Commodore's sales folk to get their act in gear and get CDTV's into these stores, wired up to their audio and video systems. They'll draw customers like moths to a flame. Unlike bookstore clerks who usually seem willing to hike all over their store to help a customer find

### Here's the most complete list of CD+G discs I could paste together from various sources:

Alphaville "Breathtaking Blue" Atlantic 81943  
 Laura Branigan "Laura Branigan" Atlantic 82086  
 Ella Fitzgerald "Ella/Things Ain't What They Used to Be" Sire 26023  
 Flamin' Groovies "Groovies' Greatest Grooves" Sire 25948  
 Fleetwood Mac "Behind the Mask" Warner Bros 26111  
 Emmylou Harris "Pieces of the Sky" Reprise 2284  
 Jimi Hendrix "Smash Hits" Reprise 2276  
 This digitally remastered collection of songs has wildly psychedelic graphics, like a Fillmore poster come to life. Mandalas, lots of digitized and colorized thematic pictures, and shots of Jimi. Various fades and scrolling are used. Colors pulse to the beat in many songs. No lyrics. An absolute MUST for Hendrix fans.  
 Information Society "Information Society" Tommy Boy 25691  
 Chris Isaak "Silvertone" Warner Bros. 25156  
 Little Feat "Hoy, Hoy" Warner Bros. 3538

Little Feat "Representing the Mambo" Warner Bros 26163

Graphically, the best pop/rock CD+G I've seen so far. Each song is represented by excellent scrolling thematic graphics. Considering the limited color palette of CD+G and its low resolution, this one is quite an achievement. English lyrics display with the graphics for many of the songs.  
 Van Dyke Parks "Tokyo Rose" Warner Bros 25968  
 Gram Parsons "GP/Grievous Angel" Warner Bros 26108  
 Bonnie Raitt "Green Light" Warner Bros. 3630  
 Bonnie Raitt "Nine Lives" Warner Bros 25486  
 Lou Reed "New York" Sire 25819

A title screen, some digitized scenes, and then lyrics for each song take over the screen. CD+G is capable of 15 "channels" of language information and this disc has multi-language lyric graphics in English, German, Spanish, French and etc. available at screen bottom. Some interesting/depressing New York graphics in some of the songs. The whole album is pretty depressing, but hey, that's Lou Reed. You won't hear this one on the radio.  
 Various Artists "Woody Guthrie Tribute" Warner Bros 26036



something, most record store clerks actually take offense at a customer knowing about something they don't. Perhaps things are better in your neck of the woods than they are in mine.

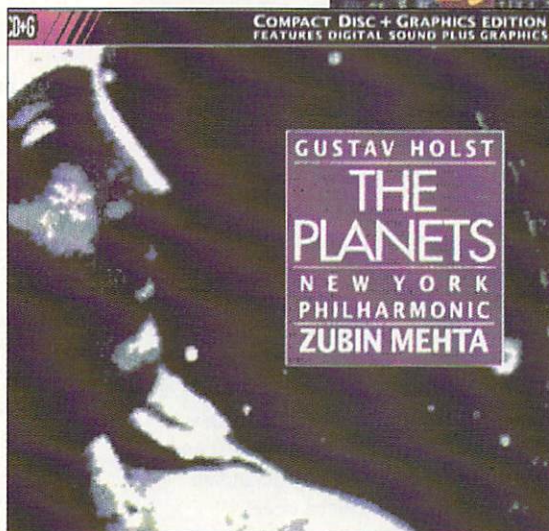
CD+G discs will usually be found co-mingled with regular discs in the regular bins. Warner Brothers Records, and its house labels, and Warner New Media are the main purveyors of CD+G discs, in fact, they dominate this still-small realm. The older Warner Brothers discs are quickly identified by a bright yellow CD+G sticker on the outside of the standard long box, but not always on the front of the box. The new series of WNM discs come in redesigned long boxes with the CD+G info printed right on it, and on the disc itself.

Besides CDTV, machines which can handle CD+G graphics include (but are not necessarily limited to) high-end consumer decks such as the JVC XLG-512NBK, and CD-ROM based game machines such as the NEC TurboGrafx-16 unit with CD-ROM and Sega Genesis CD-ROM game unit.

#### Warner New Media

3500 Olive Avenue  
Burbank, CA 91505  
818-955-9999

Two of the  
better CD+G  
discs so far



The jewel boxes of  
these two CD+G  
discs only hint at  
the images inside.

Johann Sebastian Bach "St. Matthew Passion" WNM (Warner New Media) 15010

Ludwig Van Beethoven "String Quartet NO. 14" WNM 15011

Ludwig Van Beethoven "Symphony No. 7" WNM 15008

Beethoven/Liszt "Symphony No. 9" WNM 15009

Anton Bruckner "Symphony No. 9" WNM 15004

Gustav Holst "The Planets" WNM 15001

Whew! I thought Little Feat's album was good - this one is unbelievable. With Warner New Media's second generation CD+G graphics, this is an absolute sonic and visual masterpiece. It goes miles beyond other CD+G discs I've seen. Beautiful, mind-boggling, often spine-tingling scrolling "collages" interpret each of the "planet" movements beautifully. This is a full digital (DDD) recording too. A must have.

Gustav Mahler "Symphony No. 5" WNM 15007

Felix Mendelssohn "Symphony No. 3" WNM 15003

Wolfgang Amadeus Mozart "Abduction from the Seraglio" WNM 15006

Henry Purcell "Dido and Aeneas" WNM 15005

#### The following CD+G titles were made in very limited quantities and may be difficult to locate:

Anita Baker "Rapture"

Crosby, Stills & Nash "Live it Up"

Frozen Ghost "A Nice Place to Visit"

Honeymoon Suite "Racing after Midnight"

Simply Red "Picture Book"

Phoebe Snow "Something Real"

Donna Summer "Another Place and Time"

Talking Heads "Naked"

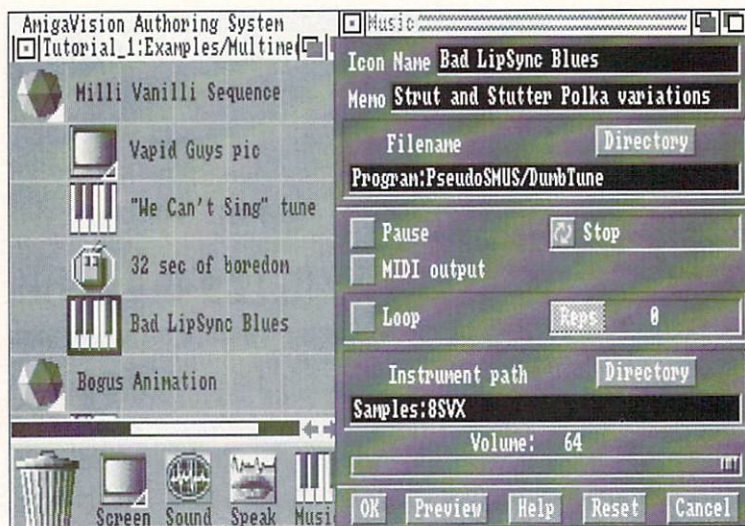
10,000 Maniacs "Blind Man's Zoo"

#### I also found one non Warner's label CD+G disc:

The Home Video Album RCA Victor 60354-2-RC

This disc contains some atmospheric music from motion pictures (Studio Fanfares, Overtures, Intermissions, etc.) plus a few dozen somewhat hokey graphics screens, the intent being to spice up homemade video tape footage by running the video-out of your CD+G player into your tape deck. This disc is usually found in stores' "Sound Effects" bins.





AmigaVision's music requester.

**A**ny boob with \$20,000 worth of audio equipment, a degree in sound engineering, and ten years of audio post-production experience can go into the studio and sync up a tightly conceived and recorded soundtrack for a multimedia presentation. It takes real fortitude, determination, and perhaps a bit of brain damage to tackle the same task with no money, modest talents, a cheap parallel port sound sampler, a couple pieces of used MIDI gear, and an Amiga. But it can be done.

Unfortunately, every musician knows that we tend to be the last ones to get the great tools. If the rest of the world was excavating with a steam shovel, we'd still be scraping the bottom of the Panama Canal with a nail file and spade.

Unless you accidentally grabbed this magazine on the newsstand while reaching for *Industrial Gasses Magazine*, chances are good that you already know the Amiga is the best hardware choice for multimedia development. But even the computer that fired the first shot in that revolution lacks a clear-cut solution for combining first-rate images with first-rate sounds and tunes.

[With the possible exception of Gold Disk's ShowMaker - see OJ's review in next issue's Video column. -Ed.]

The newer, more powerful programs only achieve multimedia max-out when combined with other applications, a slightly costly proposition. The older products tend to be more self-contained, more widely used, and less expensive; but because they are older, they are

inclined to be less comprehensive in their sound support.

Still, all you need is something that works. So, here's a brief, biased whistlestop tour through four venerable and not-so-venerable software tools to combine images, animation, and sound. They're all relatively affordable, as opposed to state-of-the-art, and sport somewhat different feature sets. Maybe one has the right stuff for your project.

## AMIGA VISION

Slap Commodore's imprimatur on it and you have an Amiga standard. The world is now full of Amiga owners who know the names and capitals of all the United States, can whistle a Bach two-part invention, and haven't a clue on how to do anything but load the prefab demos in *AmigaVision*.

Even so, you shouldn't eyeball the demos and then avoid the learning curve. The *AmigaVision Authoring System* boasts a logical icon-based interface (in many ways superior to the overrated *Hypercard* on the Macintosh) and an easily understood object-oriented structure that effectively can combine separate pieces of Amiga artistry into polished interactive presentations.

Musically, though, *AmigaVision* is somewhat limited by its reliance on the SMUS (Simple Music) file format. Music composed for *AmigaVision* presentations must be generated in a SMUS-oriented program such as *Sonix* or *Deluxe Music*, or composed as a four-track MIDI file and then converted to the SMUS format.

The limits are more severe for MIDI musicians. Only four MIDI tracks are allowed, each with only one voice. So, while you can send MIDI data out of *AmigaVision*, it hardly exploits the capabilities of a good synth. One might almost wonder if they hamstrung the MIDI support to make the Amiga sound better.

## DELUXE VIDEO III

Like *AmigaVision*, *Deluxe Video III* from Electronic Arts (EA) is an authoring environment for generating interactive presentations. Though each program has its fans, *DVideo* provides more built-in animation and presentation tools at the cost of a more complex interface. *AmigaVision* is more effective as the multimedia "glue" between the outputs of disparate applications.

Yet, both products have similar sound support. Like *AmigaVision*, *DVideo III* supports only the SMUS file format, but links to MIDI devices in a somewhat more sophisticated way.

*DVideo III* accepts multiple MIDI channels and program change information embedded in a SMUS file. In short, it supports the level of MIDI implementation seen in EA's *Deluxe Music*, making this the logical companion product if you intend to make much use of MIDI within *DVideo III*.

Bob Lindstrom  
looks at  
multimedia  
programs and  
tries to get a  
sound in  
edgewise.



Support for digital samples, either as musical instruments or sound effects, is similar to *AmigaVision*. It works. It sounds. It syncs.

The non-musical choice between *AmigaVision* and *DVideo III* is one of interface (slightly easier in *AmigaVision*), brush animation routines (superior in *DVideo III*), and the number of built-in effects and features you require (*DVideo* is conceived to be more self-contained overall than *AmigaVision*).

For the musician, it's very much a toss-up for internal Amiga sampled sounds. But *DVideo III* offers better MIDI support.

## AREXX

Some of the more knowledgeable among you may be muttering, "ARExx, ARExx," by now. You're dismayed because I seem to be overlooking the power that this interprocess communication language adds to both *AmigaVision* and *DVideo III*.

While a sequencer such as Blue Ribbon Soundworks' *Bars & Pipes* can be controlled through an ARExx port, the limited bandwidth of that port makes it inappropriate for the passing of MIDI information. You can, however, add stand-alone MIDI support to authoring programs that otherwise support only SMUS files and gimpy MIDI.

Still, the need to learn ARExx commands, for a musician who is probably already up to his guitar pick in MIDI jargon, renders this option somewhat less than attractive, in my opinion.

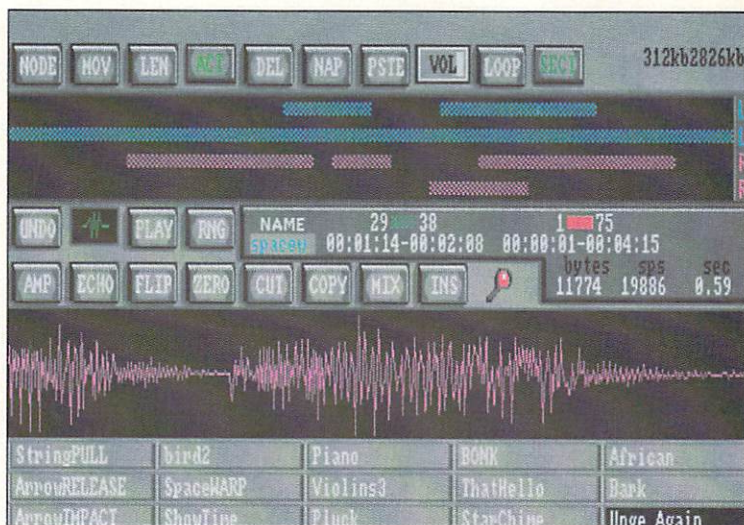
## NOISY CARTOONS

If you don't give a dissonance for multimedia interactivity and just want to put cartoons on screen with sound effects and some music, I have a pair of suggestions from left field.

Disney Software's *The Animation Studio* is primarily for creating character animations. Just don't overlook the fact that its Exposure Sheet module permits you to combine SMUS files, digital instruments, sound effects and ANIM files into polished and, more to the point, tightly synchronized presentations. It has a thorough set of internal voice commands, including control over tempo and volume and instruments; but no MIDI.

Even more specialized is *ANIMATION: Soundtrack* from Hash Enterprises. This utility specifically targets the task of recording and editing digital samples, then syncing them up with ANIM files. If you're trying to lip sync dialogue with on-screen images (not a musical task, but, face it guys, we generally end up doing sound effects, too), this is the most complete tool I know.

Samples are recorded within the program, then timed out down to the individual frame per second (with settings for all the film and video rates from 24 fps to 30 fps dropframe). The numbers within the program allow the



Samples may be synchronized with ANIM files in *Soundtrack*.

sound technician to create very precise timing sheets for the animator.

With animation complete, the sound technician/musician returns to *Soundtrack* with a range of options that permit him to align sound and image down to individual phonemes, a must for precise lip syncing.

The limit here is a musical one. Unless you're prepared to digitally sample huge music files, *Soundtrack* is best used for integration of sampled sound effects and dialogue. If you need to add a musical soundtrack as well, you're back to the studio, the engineering degree and the decade of experience.

Or you could just whip out that stereo Walkman and do the best you can.

## Addresses

*AmigaVision*, \$149.95

**Commodore**, 1200 Wilson Drive,  
West Chester PA 19380, 215-  
431-9100

*DeluxeVideo III*, \$149.95

**Electronic Arts**, 1450 Fashion Island Blvd., San  
Mateo CA 94404, 415-571-7171

*The Animation Studio*, \$179.00

**Walt Disney Software**, 3900 W. Alameda Avenue,  
23rd Floor, Burbank CA 91505, 818-567-5360

*Soundtrack*, \$119.95

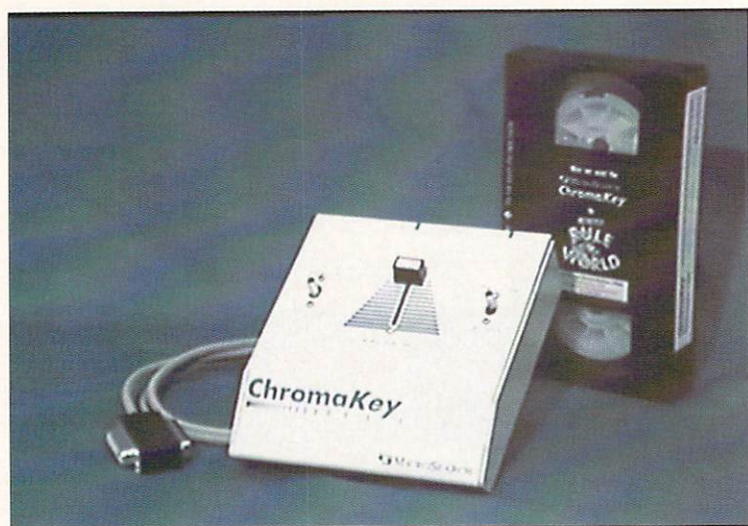
**Hash Enterprises**, 2800 E. Evergreen Boulevard,  
Vancouver WA 98661, 206-256-8567



**There's hot artistic  
weaponry for  
artists and writers;  
but cold comfort  
for a musician on  
a budget.**







ChromaKey with tape, cable, and blue chromakey cloth.

**W**e video professionals like to think of ourselves as being in the imagination business: You imagine it, and we'll produce it. (Or at least we'll make you think we did!) And one of the more powerful tools we use is the chroma keyer. Its magic can place weathermen in front of weather maps and float an astronaut over the planet Earth. It's all smoke and mirrors, perhaps, but the 'virtual reality' people have little on us when it comes to creating impossible or improbable scenes.

### WHAT IT IS

The chromakey process is really very simple. The chroma keying unit looks for the color blue in your video image and removes it, replacing it with video from a second source. Don't confuse chroma keying with luminance keying where the determining factor for replacing the video is the video's brightness level. Although in theory any color can be used, in practice blue is the more predominant because it's so far removed from skin tones (Lime green is a close runner-up). This process was originally only usable with three-tube color cameras with RGB outputs.

Today, composite color outputs are usable because methods of cleanly decoding the signal back into the RGB component signals has become possible. The price is still high, though - often several thousand dollars.

### FOR THE AMIGA

Of course, time marches onward and electronic devices get better and cheaper. So I suppose I really shouldn't be surprised that a chroma keyer for the Amiga is not only available, but inexpensive. MicroSearch, a company best known for its *Color Splitter* box for video digitizers, is shipping the world's first desktop video chroma keyer, named appropriately enough, *ChromaKey*. The surprise is that it's much better than I had hoped. For \$395, I didn't expect much, but this little box works well enough to be used for typical garage-video and local cable productions. With careful usage, the industrial and educational market could even put it to use.

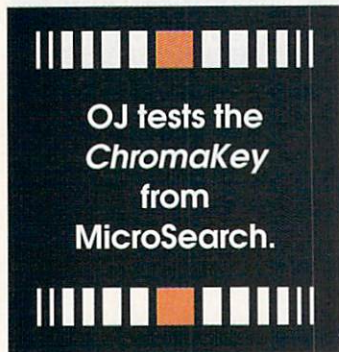
The *ChromaKey* isn't quite a 'normal' chroma keyer, though. It strips the blue out of your first video source, but the second video source *must* be the Amiga. Of course that's hardly a limitation. Connecting between your Amiga and an external genlock, the *ChromaKey* intercepts the necessary signals to process the video. The *ChromaKey* does the color detection while the genlock is used to do the keying portion of the chroma key process - a very nice implementation that cuts the cost.

### INSTALLATION

The *ChromaKey* installs easily. Simply follow the manual's diagrams and you'll be hooked up in less than a minute. The *ChromaKey* has its own power supply, so it won't load down your Amiga. That makes it safe for A500 owners. Rummaging around in the box will find several other interesting items. MicroSearch figured you might need a ready source of blue backgrounds, so they included a large piece of blue cloth. They also figured you'd need some computer graphics to use as background graphics, so there's a disk of those as well. And finally, there's a *ChromaKey* tape demo that may have you scratching your head wondering "how'd they do that?" (Read the manual and find out!)

The manual included with the *ChromaKey* is clear and concise, with plenty of illustrations for the criminally klutzy. It addresses all the controls, adjustments, and techniques you'll need to know to produce good chroma key images. You'll even find an appendix that lists sources of chroma key blue cloth and paint.

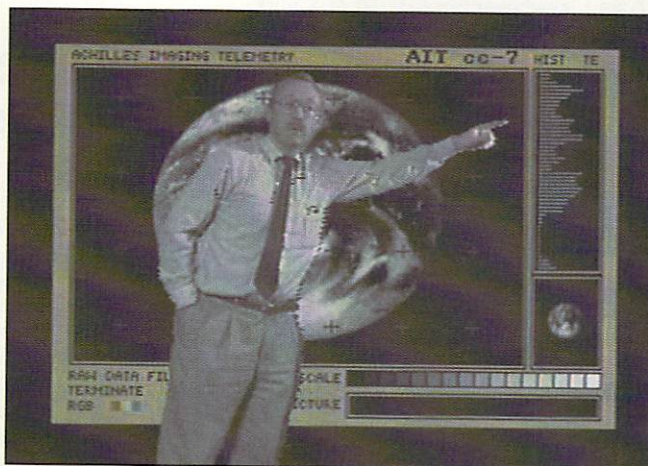
The controls on the *ChromaKey* are simple and few. There is a large slider for adjusting the key level, and a toggle switch for selecting regular genlock operation or chroma key mode. Another toggle inverts the keying effects. The connections are also few in number: one BNC for the video input, one for the output, a power connector, and a special connector for the cable that hooks up between the Amiga and your genlock. (Take note: the *ChromaKey* does not work with internal genlocks or on *Video Toaster*-equipped machines, though MicroSearch is working on new versions that will.)







"MotoOran" - OJ has always wanted to ride Jim Sachs' motorcycle!



The author points out important results of the latest satellite pics.

## USING THE CHROMAKEY

Using the *ChromaKey* can be a little tricky. That's not due to any problem with the *ChromaKey*; it's a problem with *every* chroma keyer. The blue component of a color video signal is inherently noisy, which makes keyed edges ragged or 'fringy.' This can be reduced by careful lighting and color balance of both the lights and the camera. A great deal of caution must be used to properly set up a scene for chroma keying. I must admit that the *ChromaKey* seems to be a little less touchy than some more expensive units I've used, though.

There are several steps to setting up a chroma key scene. First, make sure you have a blue background; preferably all the same color blue - same tint, same brightness. If using a cloth, try to remove wrinkles or sags. Light it evenly and brightly. Put your subject in front of the background and light it separately. Be very sure that the subject doesn't cast a shadow on the background. That creates a darker blue than the rest of the background and might make a noisy key. Angle the lighting so the shadows fall short of the background. Remember that blue clothing will also key out, so stay away from that color unless that's the effect you're looking for. Make sure your Amiga-produced background graphics cover the screen from edge to edge, or you may ruin the illusion you're trying to create. After all these things are in place, you need to adjust the *ChromaKey* itself.

## TWEAKING THE CHROMAKEY

The most obvious adjustment to make is the key level. Moving the slider will take you from all video to all graphics. Somewhere in between you'll find the blue disappearing and the graphics showing through. Careful adjustment will produce an image with very little fring-

ing around the edges. If this point isn't easily achievable, then your lighting is probably the culprit. Examination of the subject's image will show a leading or lagging shadow or outline. This can be reduced by opening up the *ChromaKey* and changing the Delay adjustment. This correction is necessary as no two brands of genlock have the same amount of key delay. Charts and diagrams are included to make this easy, with suggested settings for the more popular genlocks. A Hue adjustment is also possible to make sure the *ChromaKey* is keying on the same hue of blue that you are using. With these tweaks completed, you should now have the imaginary image you were trying to complete.

I expect to see some really interesting videos put together with a *ChromaKey*-equipped Amiga. Remember the old tv show *The Invisible Man*? (Okay, so I'm showing my age!) My favorite scene was where he'd unwrap the bandages from his head and there would be nothing there! He merely had his head in a blue cloth bag. Blue gloves under his white ones created the same illusion for his hands. Godzilla stomping over Tokyo is another possibility with your *ChromaKey*. Let your imagination run wild! I predict that this will quickly become the one of the more entertaining and useful video devices you'll own. Reality is virtually just around the corner with the *ChromaKey*.

**NOTE:** The screenshots were done using DCTV to digitize a videotape of the *ChromaKey*'s output.



**ChromaKey**

☆☆☆☆

**\$395.00**

**MicroSearch**

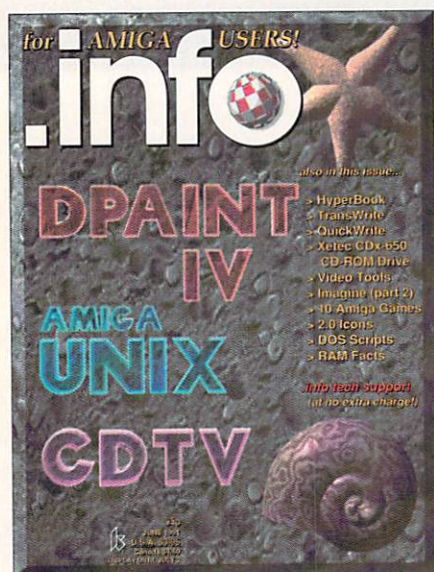
**9896 S.W. Freeway**

**Houston, TX 77074**

**(713) 988-2819**







for **AMIGA** **USERS!**  
**.info**

**\$5.50 EACH!**  
**\$6.50 Outside the USA.**

**BACK**  
**ISSUES**


- #2 INFO 64, Winter 1983/84**  
 Guide to C64 products, Koala pad, Flexidraw, UltraBASIC-64, Home Accountant vs. C.P.A.
- #3 INFO 64, Spring 1984**  
 Product Round-up: 1000 product listings for C64, Superbase 64, Commodore LOGO, C64 Forth, Model Diet, Computer Mechanic.
- #6 INFO 64 Spring 1985**  
 Color Gallery! C64 hard drives, Intro to Assembly Language, COMAL 2.01, The Print Shop, Whithier C/PM.
- #10 INFO May/June 1986**  
 Monitor Roundup! C64 wordprocessors, Multiplan for C64/C128, Amiga BASIC, Tips & hints.
- #11 INFO Aug/Sept 1986**  
 Product Roundup issue: over 1500 hardware and software listings for C64, C128 and Amiga.
- #12 INFO Nov/Dec 1986**  
 Graphics report: C64/128 and Amiga painting, CAD, drafting, video animation, tools and utilities. Idea-processors, 8 bit business software.
- #13 INFO Jan/Feb 1987**  
 Games issue: C64/C128 and Amiga games, 8-Bit business and application software (part I), Telecommunication networking, Amiga Music.
- #14 INFO Spring/Summer 1987**  
 Product Roundup issue: over 2000 hardware and software listings for C64, C128 and Amiga. First look at the A500 & A2000 systems.
- #15 INFO July/Aug 1987**  
 1st Annual C.H.U.M.P. Magazine! Commodore & Amiga Survival Guide, Anne Westfall interview, TDI Modula 2, Supra Hard Drive.
- #17 INFO Nov/Dec 1987**  
 ANNUAL GAMES ISSUE! GEOS Update, 16/32 bit comparison, C128 ROM upgrades, B.E.S.T. Accounting, Word Writer 3, DIGA!
- #18 INFO Jan/Feb 1988**  
 Desktop Publishing & wordprocessors (part I), Virus diagnosed, Geos Update, C64 Power Cartridges, C128 Superpak II.
- #19 INFO Mar/Apr 1988**  
 Desktop Publishing & wordprocessors (part 2), Leo Schwab interview, GEOS Update, ICT hard drive, Digital SuperPak2, Thoughtform.

- #20 INFO May/June 1988**  
 Desktop Video: Titlers, genlocks, converters, C64 slide show programs, GeoStuff, AmigaDos 1.2 Bugs, Joel Hagen tutorial.
- #22 INFO Sep/Oct 1988**  
 Digitizing, Mac VS. Amiga, GeoStuff, Over 50 reviews for C64, C128, and Amiga computers, IN-Fomania Game Tips! BRYCE debut!
- #23 INFO Nov/Dec 1988**  
 ANNUAL GAMES ISSUE!! INFO Mania Game Tips, New Products, News & Views.
- #24 INFO Jan/Feb 1989**  
 Amiga 3D Graphics Round Up, Reichart Von Wolfsheld interview, GeoStuff, SuperBase Pro, Spectrascan, Sky Travel.
- #25 INFO Mar/Apr 1989**  
 Amiga Animation Round Up, Rodney Chang interview, C128 T.H.I.S., GeoCalc 128, Dr. Term Pro, AC/BASIC, Microfiche Filer Plus.
- #26 INFO May/June 1989**  
 Paint Program Round Up, Loren Lovhag interview, Removable Mass Storage, 1581 Toolkit, MicroLawyer, WillMaker, Pen Pal.
- #27 INFO Jul/Aug 1989**  
 3rd Annual C.H.U.M.P. Magazine! Dale Luck interview, Sound & Music, Fractals, GeoProgrammer, Silentwriter LC890, Transcript.
- #28 INFO Sept/Oct 1989**  
 Video Boot Camp! High-End Amiga Expansion, Gail Wellington interview, 3D options, Home Town, Viking I, A-Max, Anti-Virus, V.I.P.
- #29 INFO Nov/Dec 1989**  
 Annual Games Issue! Chris Crawford interview, SFX Sound Expander, The Write Stuff 128, Toshiba ExpressWriter 301, RawCopy, Mac-2-Dos.
- #30 INFO Jan/Feb 1990**  
 Amiga Desktop Publishing Tools, LOGO, A590 Hard Drive, Dual Serial Board, Abacus Books, Twin Cities 128 book.
- #31 INFO July 1990**  
 Amiga 3000, AmigaVision, AmigaDOS 2.0, R.J. Mical interview, Ray-Tracing, TV\*Text Pro, CanDo, CrossDOS, FractalPro, ScanLab 100.
- #32 .info September 1990**  
 First issue of monthly All-Amiga .info! Turbo Silver, Laurence Gartel interview, Page Stream 1.8, Power PC Board, introducing CDTV, all new .info Technical Support section by Sullivan and Zamara.
- #33 .info October 1990**  
 Fractal Frontiers, Inside AmigaVision, Peggy Herrington's new Music & Sound column, Pro Video Post, The Art Department, Archivers.

- #34 .info November 1990**  
 The Video Toaster Cometh! George Christensen interview, ProWrite 3.0, Synthia II, Saxon Publisher, Pro Draw 2.0, Hard Disk Management.
- #35 .info Dec 90/Jan 91**  
 Annual Games Issue! The year's top 25 games, Exclusive - Amiga Unix, Battletech Center, Elan Performer, GVP Impact II SCSI RAM Controller.
- #36 .info February 1991**  
 Image Wrapping, The Amiga in Europe, Victor Osaka interview, World's first Video Toaster Show, Renderman, A-Max II.
- #37 .info March 1991**  
 Ellison Horne profile, Video Toaster part 2, MINIX 1.5, Pagestream 2.0, Power PC Board, Animation Studio, AudioMaster III & E-Z FM.
- #38 .info April 1991**  
 Amiga Networks, Draw4D, Auto-Script, J. Hopkins profile, Video Toaster part 3, WOC, CES, UNIX shows, MacroPaint, Big Belly RAM.
- #39 .info May 1991**  
 Special Music & Sound issue! New Products from Casio, Dr. T's, and Blue Ribbon. Plus Imagine, Arrow 1500, Bodega Bay, and Professional Page 2.0.
- #40 .info June 1991**  
 DPaint IV! CDTV, Hyperbook, Xetec CD-ROM, Amiga UNIX, AmigaDOS Scripts, TransWrite, RAM facts, and Amiga World Expo NY.
- #41 .info July 1991**  
 DCTV, Proper Grammar, PageStream 2.1, Image Processing, Trumpcard 500, Supra Drive 500XP, CI3000 Film Recorder, Art Dept. Professional.

Use the tear-out  
 order card or charge  
 by phone with your  
**VISA**  
 or  
**MASTER CARD**  
**(319) 338-0703**



for  **AMIGA**  
**inf**

*Rip into the*  
**AMIGA**  
magazine  
with more

Desktop Publishing:  
can Amiga compete?

for  **AMIGA** **USERS!**  
**.info** 

Monster  
(25 Meg)  
Floppies!

*Use the card to  
subscribe  
today!*

#42  
AUG/SEPT 1991  
U.S.A. \$3.95  
Canada \$4.50  
DISPLAY UNTIL SEPT. 10

**PLUS:** Inside CDTV \* ADPro for  
Publishing \* 10 New Games \*  
Networking (part 2) \* Micro-Math \*  
AmigaDos Scripts \* and More!





# Rocky Mountain High

## THE 1991 AMIGA DEVELOPERS CONFERENCE

by Mark R. Brown

**T**he 1991 Amiga Developers Conference was held the first week in September at the Denver Marriott City Center, just a few blocks from the U.S. Mint. I was there. So were 265 other attendees from six countries.

Commodore handed out over 800 pages of documentation and four disks of sample code to attendees. There were about four dozen formal sessions, concentrating on new hardware under development (top-secret stuff!), CDTV, international marketing, 2.0, and other topics. The whole works was kicked off with a barbeque Tuesday night, and a speech by CATS head Jeff Scherb early Wednesday morning. I really liked the barbeque.

We were told that the A3000 Power Up program had been very successful - so successful that it caused a temporary shortage of 3000s. We were also told that 3000s are substantially outselling the A2000. Video and presentation markets are the emphasis of present Commodore ad campaigns, and the Amiga has about 70% of the video computer market. Commodore is now targeting the corporate training and kiosk markets with both Amiga and CDTV.

Commodore announced the release of the Workbench 2.0 *Enhancer Kits* with 2.0 ROM, disks, and manual. It will be available by the time you read this. Rev 2.0 ROMs will also be 'phased in' to new units.

Commodore will bundle *Grolier's New*

*Electronic Encyclopedia* and Psygnosis' *Lemmings* with new CDTV units for the Christmas season. CDTV sessions demoed Commodore's CDXL straight-off-the-CD data technology, which is capable of displaying 1/4 screen, 12 frame-per-second video with stereo audio in real-time. That may not sound like much, but it's more than CD-I can deliver, and CDXL demos much better than it sounds. With the right software, it should really help sell CDTV. Commodore spokespeople said they are 'keenly aware' of the suggestions of the public and press for improvements and additions to CDTV, and there was much talk of a 'CDTV Family' of products. The keyboard, mouse, and disk drive for CDTV will be coming 'after the first of the year,' and the new IR trackball should be available by the time you read this. There will be an intensive advertising 'test campaign' in the San Francisco Bay area for Christmas, with CDTV slated to be in 10-15 major urban markets by the holidays. If you can't find CDTV in your area, call 800-662-6442 for dealer information. Mail order CDTV software is available by calling Commodore at 800-468-CDTV. CDTV units are also available by mail order through Hammacher-Schlemmer and Montgomery Ward.

85% of Commodore Amiga sales are overseas, and many sessions concentrated on 'localization' of products for the international market. CBM is helping developers find translators for software and manuals and has created a new 'locale.library' which will considerably speed up the software translation process. They are also assisting developers in their efforts to link up with European distributors.

But did Commodore announce any hot new products, you ask? There are, as usual, many top-secret new machines, boards, and chips under development behind the doors of the Commodore Engineering Department, and some prototypes were shown and discussed at DevCon. We can't talk about

them here, since we signed a non-disclosure agreement. But the folks we talked to assured us that Commodore is always working on the next generation of machines, and they are keenly aware of the need to compete against other computers with enhanced capabilities, such as 256 color VGA-type displays, 24-bit graphics, and 16-bit CD-quality stereo audio.

Commodore is doing really, really well in Europe. They turned a profit this fiscal year, and posted over a billion dollars in sales for the first time since the C64 days. Unfortunately, U.S. sales don't seem to be following along. Though Commodore has some good plans for the video, education, and presentation specialty markets, don't expect to see a big general-purpose marketing and advertising push in the U.S.

With CDXL, CDTV is a CD-I killer. It will sell CDTVs when consumers see software that takes advantage of it. There are now 50 CDTV titles available, with 50 more by Christmas, and 100 more in first quarter 1992. Remember, software drives hardware sales.

Workbench 2.0 is out, and looks great. It should do a lot to improve the Amiga's professional image.

Impressive new hardware is under development. The CBM engineering department is again in the process of proving themselves the top wizards in the computer industry.

In the meantime, we all own the best computers available on the third planet from the sun. Let's put 'em to good use.

---

For Subscribers Only! For more DevCon News That Just Wouldn't Fit, see this issue's WrapUp! In the Wrap: Fun Things We Did in Denver; 1991 Developers' Choice Awards; New 3rd Party Products Announced.





# POWER COMPUTING

Credit Card Orders Only, Call Toll-Free 1-800-45-POWER

(215) 922-0050

Fax: (215) 922-0116

## POWER COMPUTING

POWER MOUSE	\$ 38.00
PC880B POWER DRIVE	\$ 99.00
BLITZ AMIGA - A500/2000	\$ 34.95
DUAL DRIVE	\$ 199.00
POWER SCANNER	\$ 259.00
A500 INTERNAL DRIVE	\$ 79.95
A2000 INTERNAL DRIVE	\$ 79.95
512K RAM CLOCK CARD	\$ 59.95
512K RAM WITHOUT CLOCK	\$ 49.95
PRO SOUND AMIGA	\$ 49.95

## PRODUCTS

### PC880B POWER DRIVE - NEW

HIGH SPEC 880K FLOPPY DRIVE	
BLITZ HARDWARE COPIER BUILT-IN (SWITCHABLE)	
POWER COMPUTING ANTICLICK FEATURE	
VIRUS BLOCKER BUILT-IN (SWITCHABLE)	

**\$149.00**

### 1.5 MB EXPANSION BOARD

PLUGS EASILY INTO YOUR A500	
KICKSTART 1.3 AND ABOVE	
SIMPLE INTERNAL FITTING	
FULLY COMPATIBLE WITH FATTER	
AGNUS AND	
1 MB CHIP RAM	

**\$189.00**

## EXPANSION SYSTEMS

### BASEBOARD MEMORY EXPANSIONS FOR A500

OK	\$ 95.00
512K	\$ 118.00
1 MB	\$ 135.00
2 MB	\$ 174.00
3 MB	\$ 220.00
4 MB	\$ 249.00

### DATA FLYER

A-500	\$ 129.00
A-2000	\$ 79.00

## ATONCE

### PC/AT EMULATOR

A500	\$ 239.00
A2000 ADAPTOR	\$ 79.00

## Supra

### 500 XP HARD DRIVE KITS

EXP. TO 8 MB

20MB - w/2 MB	\$ 445.00
52 MB - w/2 MB	\$ 560.00
105 MB - w/2 MB	\$ 735.00
SUPRA RAM 500	\$ 49.00
SUPRA RAM 500 Rx 1 MB (EXP TO 8)	\$ 129.00
SUPRA RAM 500 Rx 2 MB (EXP TO 8)	\$ 189.00

SUPRA RAM 2000	
OK	\$ 109.00
2 MB	\$ CALL
4 MB	\$ CALL
6 MB	\$ CALL
8 MB	\$ CALL

SUPRA MODEMS	
2400 BAUD EXTERNAL	\$ 97.00
2400 ZI INTERNAL (A2000)	\$ 115.00
2400 MNP (2-5)	\$ 145.00
2400 PLUS (MNP - V.42 Bis)	\$ 165.00
2400 ZI PLUS (MNP - V.42 Bis)	\$ 155.00
9600 PLUS (V.32, MNP - V.42 Bis)	\$ 540.00
SUPRA WORD SYNC (A2000)	\$ 99.00
SUPRA DRIVE 3.5" EXTERNAL	\$ 99.00

## GVP

### SERIES II ACCELERATORS

with SCSI Controllers

GVP A-2000 COMBO/22 MHZ/2 MB	\$ 879.00
GVP A-2000 COMBO/33 MHZ/4 MB	\$ 1599.00

### IDE CONTROLLER

GVP 3050 50 MHZ/4 MB	\$ 2349.00
----------------------	------------

GVP A-500 HD 8 + 0/40	\$ 559.00
GVP A-500 HD 8 + 0/52	\$ 599.00
GVP A-500 HD 8 + 0/105	\$ 849.00

GVP 8/2 MEMORY EXPANSION FOR A-2000	
2 MB	\$ 199.00
4 MB	\$ CALL
6 MB	\$ CALL
8 MB	\$ CALL

GVP Series II - HC/A-2000	\$ 159.00
GVP Series II - HC 8/0 A-2000	\$ 195.00

## MICRO R&D

BIG FOOT 150 Watts power supply for A500 (200W and 250W available)	\$ 88.00
PRINTER BUFFER	\$ 120.00
JOYSTICK/MOUSE SWITCH	\$ 28.00
MW-738/A500 POWER SUPPLY (LIFETIME WARRANTY)	\$ 108.00
MOUSE (LIFETIME WARRANTY)	\$ 55.00

## MS

INTERACTIVE VIDEO SYSTEMS

TRUMP CARD 500	\$ 179.00
TRUMP CARD 2000	\$ 109.00
TRUMP CARD 500 PRO	\$ 228.00
TRUMP CARD 2000 PRO	\$ 169.00
GRAND SLAM 500	\$ 278.00
GRAND SLAM 2000	\$ 225.00
META 4	\$ 129.00
PRINTER INTERFACE AUXILIARY	
PRINTER PORT	\$ 78.00

## PROGRESSIVE PERIPHERALS & SOFTWARE

FRAMEGRABBER	\$ 429.00
FRAMEGRABBER 256	\$ 499.00
MINIGEN	\$ 189.00
BAUD BANDIT MNPS/2400 BD MODEM	\$ 139.00

## HARD DRIVES

### Quantum

52 MB - LPS	\$ 235.00
105 MB - LPS	\$ 385.00
210 MB - 5	\$ 714.00

### Seagate

ST 157N - 1/49MB-28MS	\$ 225.00
ST 277N - 1/60MB-28MS	\$ 275.00
ST 1096 N /80MB-20MS	\$ 325.00
ST 296 N /80MB-28MS	\$ 285.00

### SyQuest

44 MB REMOVABLE	\$ 400.00
44 MB w/CARTRIDGE	\$ 475.00
CARTRIDGE	\$ 75.00

## AMIGA EXTRAS

AMTRACK TRACKBALL	\$ 64.95
BODEGA BAY	\$ CALL
BODEGA BAY WITH MALIBU	\$ 45.00
BEETLE MOUSE	\$ 99.00
BOING OPTICAL MOUSE	\$ 99.00
CUTTING EDGE MAC DRIVE 3.5"	\$ 199.00
CHROMAKEY	\$ 319.00
DPS PERSONAL TBC	\$ 849.00
DAKOTA SKETCHMASTER 12x12	\$ 379.00
DAKOTA SKETCHMASTER 12x18	\$ 559.00
FLICKER FIXER	\$ 239.00
FLICKER FIXER DEB 2000	\$ 94.00
FIRECRACKER 2400-2MB	\$ CALL
ICD SHUFFLE BOARD	\$ CALL
MAGNI SYSTEMS	\$ CALL
MIGRAPH HAND SCANNER	\$ 299.00
PANASONIC 16MM LENS WITH IRIS	\$ 69.00
PANASONIC 16MM LENS W/O IRIS	\$ 29.00
PANASONIC W1410 CAMERA WITH CABLE	\$ 209.00
REJUVENATOR 1000 WITH AGNUS	\$ CALL
SHARP COLOR SCANNERS	\$ CALL
SCANLOCK	\$ 849.00
VIDEO MASTER	\$ 1079.00

## UPGRADE/REPLACEMENT CHIPS

KICKSTART 1.3 ROM	\$ 27.00
KICKSTART 2.0 ROM	\$ CALL
8372A FATTER AGNUS 1MB	\$ 85.00
8372B FATTER AGNUS 2MB	\$ CALL
8362 DENISE	\$ 26.00
8372 SUPER DENISE	\$ CALL
8364 PAULA	\$ 26.00
5719 GARY	\$ 12.95
3520 CIA	\$ 15.00
1 MB x 4/80NS SC ZIP (A3000)	\$ 30.00
1 x 1/80NS	\$ 5.50
256 x 4/80NS	\$ 5.50
256 x 1/80NS	\$ 2.00
1 x 8/80NS SIMM	\$ 45.00
4 x 8/80NS SIMM	\$ 198.00
FATTER AGNUS CHIP PULLER	\$ 6.50



3.5" ULTRA SLIM 880K EXTERNAL FLOPPY DRIVE	\$ 88.00
525" 360/720 K EXT. DRIVE	\$ 150.00
MOUSE	\$ 39.00
GENLOCK A500/2000	\$ 199.00

## AE APPLIED ENGINEERING™

AE-DATA LINK 2000 (INT.)	\$ 135.00
AE-DATA LINK 2000 W/MNPS - FAX (INT.)	\$ 189.00
AE-DATA LINK EXPRESS W/MNPS - FAX (EXT.)	\$ 215.00
AE-HIGH DENSITY FLOPPY DRIVE	\$ 189.00



3.5" EXTERNAL DRIVE

**\$99.00**



### MEGAMIDGET RACER

25 MHZ (A500-2000)	\$ 599.00
33 MHZ (A500-2000)	\$ 679.00

### MEGAMIDGET ECONOMY

25 MHZ (A500-2000)	\$ 499.00
33 MHZ (A500-2000)	\$ 599.00
MATH COPROCESSOR 25MHZ-33MHZ	\$ CALL
MEGA MIDGET RACER MEMORY	\$ CALL



### VIDEO TOASTER

**\$1399.00**

## ICD

Ad SCSI 2000	\$ 129.00
Ad SCSI 2080	\$ 169.00
Ad SCSI 2080 2 MB	\$ 269.00
Ad SCSI 2080 4 MB	\$ 369.00
Ad SCSI 2080 6 MB	\$ 469.00
Ad SCSI 2080 8 MB	\$ 569.00

Ad RAM 540	\$ 104.00
Ad RAM 540 1 MB	\$ 142.00
Ad RAM 540 2 MB	\$ 180.00
Ad RAM 540 3 MB	\$ 218.00
Ad RAM 540 4 MB	\$ 256.00
Ad RAM 560 D	\$ 175.00
Ad RAM 2080	\$ 117.00
Ad RAM 2080 2 MB	\$ 189.00
Ad RAM 2080 4 MB	\$ 261.00
Ad RAM 2080 6 MB	\$ 333.00
Ad RAM 2080 8 MB	\$ 405.00

Ad SPEED	\$ 210.00
FLICKER FREE VIDEO	\$ 299.00
NOVIA 20i (A500)	\$ 479.00
NOVIA 40i (A500)	\$ 649.00
NOVIA 60i (A500)	\$ 879.00
PRIMA 52i (A500)	\$ 459.00
PRIMA 105i (A500)	\$ 639.00
AD IDE -40 (3.5" HDKII)	\$ 109.00
AD IDE -44 (2.5" HDKII)	\$ 119.00

## DIGITAL CREATIONS

DCTV	\$ 389.00
SUPERGEN 2000S GENLOCK	\$ 1349.00
SUPERGEN GENLOCK	\$ 599.00

## ROTEC

FAST TRACK A500/1000	\$ 220.00
FAST TRACK Q52 - A500/1000	\$ CALL
FAST TRAK Q105 A500/1000	\$ CALL
FAST RAM/SA5 A500/1000	\$ 75.00
FAST RAM/SA10 A500/1000	\$ 85.00
FAST RAM 2 MB A500/1000	\$ CALL
FAST RAM 4 MB A500/1000	\$ CALL
FAST CARD PLUS A2000	\$ 145.00
FAST CARD PLUS Q52 - A2000	\$ CALL
FAST CARD PLUS Q105 - A2000	\$ CALL
MINI FAST CARD - A2000	\$ 75.00
CD-ROM-650E-EXTERNAL	\$ 659.00

## GOLDENIMAGE®

GOLDEN IMAGE A500/1000/2000 MOUSE	\$ 38
GOLDEN IMAGE OPTICAL MOUSE	\$ 49
GOLDEN IMAGE HAND SCANNER	\$ 239
MASTER 3-A1 - 500/1000/2000	\$ 79
MASTER 3-A1D - 500/1000/2000	\$ 95

## ORDERING INFORMATION POWER COMPUTING USA 21 South 5th Street Suite 900 Philadelphia, PA 19106

We pay all freight charges within the continental U.S. U.P.S. Ground Service. For fast delivery send cashier's check or money order. Personal and Company checks allow 14 business days to clear. C.O.D. charges are 4.00 Insurance, add 2% to total amount. PA residents please add 6% sales tax.

AK, HI, FPO, APO, Puerto Rico and Canadian orders please add 8% shipping. Minimum \$8.00. All other foreign orders add 15% shipping. Minimum \$15.00 All orders shipped outside the continental U.S.A. are shipped first class insured Air Mail. If foreign charges exceed the minimum amount, you will be charged the additional amount. All goods are new and include factory warranty. We do not guarantee compatibility and version numbers - due to our low prices all sales are final.

All defective returns must have return authorization number. To obtain an R.A. # Call 215-922-0050. Defective returns not accepted without R.A. # PRICES AND AVAILABILITY are subject to change without notice. Shipping, handling and insurance charges are not refundable. Not responsible for typographic errors. All trademarks acknowledged.

## NO CREDIT CARD SURCHARGE

VISA - MC  
AMEX  
DINERS CLUB

## FREE DELIVERY

U.P.S. Ground  
Service - USA  
only

## WE SPECIAL ORDER

Any Hardware and Software Products FOR AMIGA COMPUTERS  
Some restrictions apply.  
50% deposit required with order (non refundable)



# .info technical support

## CONTENTS

page 54

### UNIX: Is It For You?

*Daniel Barrett* finishes his discussion with Part II: For The Programmer.

page 58

### Quarterback Tools

*David Martin* reviews this indispensable Amiga utility program.

page 60

### Point/Counterpoint

*Nick Sullivan* and *Chris Zamara* debate the relative virtues of the Workbench and the CLI.

page 62

### Checking Out Programs

*Jim Butterfield* warns that Hallowe'en and Christmas may sometimes be the same thing.

## UNIX: Is It For You?

Part II: For The Programmer

by Daniel Barrett

**I**n Part I, we discussed some differences between the UNIX and Amiga operating systems that affect all users. We now discuss issues relevant to programmers and power-users: sophisticated UNIX use, programming, and systems administration.

## The UNIX Power User

UNIX has lots of opportunities for users who like to get the most out of their computers. Most UNIX programs, including the shell user interface, are highly configurable. Some of them even let you define the behavior of every single keystroke and mouseclick (or you can accept the defaults).

Once you have mastered various UNIX programs, the power doesn't stop there. The UNIX shell lets you build sophisticated 'pipelines' that send data from one program into another. As an example, let's find out the most common first name of all the users on a UNIX machine. In a single command, you can get a list of all user names from the file "/etc/passwd," extract the first names, sort them, count adjacent identical names, sort the resulting numbers, and then find the largest:

```
Command:  cut -d: -f5
/etc/passwd \
| cut -d' ' -f1 \
| sort \
| uniq -c \
| sort -nr \
| head -1
```

Response: 12 John

(The backslashes '\' mean "continued on the next line"; I used them to emphasize the different components of the command.) The command probably looks cryptic to you now, but this kind of operation quickly becomes second-nature as you use UNIX. Because all of the above programs (cut, sort, uniq, head) come standard with UNIX, you can expect the command to work on almost anybody's UNIX machine.

How does one become a UNIX power user? Mainly by exploring the system directories and becoming familiar with many programs. In my experience, if you spend time learning a new UNIX utility, you gain the time back (and more) in your first week of use.

## Program Development

The most popular UNIX programming language is C. In fact, UNIX itself is written almost entirely in C. (Some

assembly required.) Many people consider UNIX to be one of the most versatile and productive programming environments available, for several reasons. First, it has many programmer's tools. Second, it does not allow individual programs to crash the machine. Third, the source code for many UNIX utilities is generally available.

All commercial Amiga C compilers come with a utility called *make* which helps the programmer keep track of large programs. Would you like to guess where *make* originated? It was written for UNIX by Stu Feldman of Bell Laboratories. UNIX provides a veritable arsenal of programmer's tools. There's *lex* and *yacc* to help you write complicated input routines, *sccs* and *rcs* for maintaining multiple versions of programs, *lint* to spot-check your C code for common errors, *ctags* for jumping quickly between functions in your text editor, *ctrace* for tracing program execution, *prof* for identifying the slowest parts of your code, various debuggers, and much more. Combine these tools with a powerful shell and a multitasking operating system, and you have one *serious* programming environment. (Some of these tools have been ported to the Amiga and are available on Fish Disks.)

## Virtually Speaking...

UNIX has three important features for programmers that AmigaDOS does not: memory protection, virtual memory, and resource tracking. These features come at a price, however: UNIX has much more overhead than does the Amiga kernel, and therefore runs more slowly.

Memory protection prevents one program from affecting the memory owned by another program. On the Amiga, this is not true: programs are free to scribble all over each other's memory. This is why individual programs are capable of crashing the computer (the famous guru meditation). When a UNIX program crashes, it doesn't bring down the whole machine; instead, UNIX takes a 'photograph' of the program's memory, stores it in a file, and then terminates the program. This file, called a 'core dump,' may now be examined with a



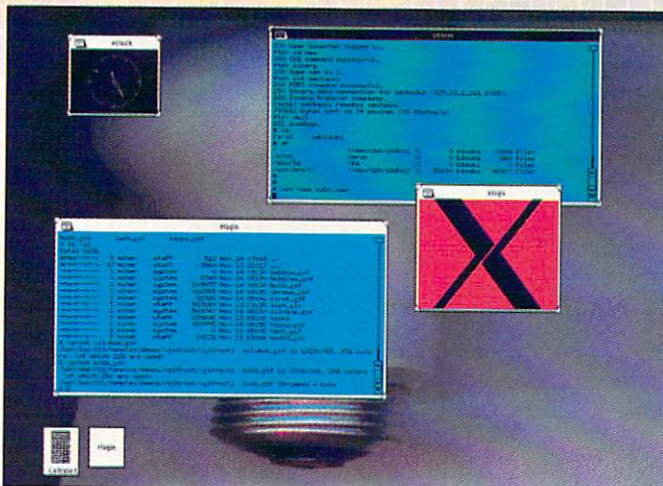
# .info technical support

debugger to determine the cause of the crash.

Virtual memory allows a program to access more RAM (Random-Access Memory) than actually exists on the machine. This is done by causing a section of your hard disk to act as if it were RAM. The operating system moves running programs between the hard disk and true RAM as needed.

Resource tracking means that the programmer doesn't have to free all the resources that he allocates. When a program exits, all of its allocated memory, files, devices, and so on, are deallocated automatically. This means that the operating system can kill a running program and be sure that everything gets cleaned up properly. On the Amiga, this is not the case: programs are required to keep track of their own allocated resources and explicitly deallocate them. There is no completely reliable way to make the operating system kill a running program, although some clever programs such as *xoper* make a good attempt.

According to rumors floating around the Amiga community, the Amiga operating system may one day incorporate memory protection, virtual memory, and/or resource tracking. However, the addition of some of these features would cause serious incompatibility with many existing programs, and some people do not want to sacrifice the CPU



Color XWindows running under UNIX VSr4.

cycles that these features will require. Let's hope that Commodore comes up with a solution that makes most users and developers happy.

## Systems Programming

Like AmigaDOS, UNIX provides programmers with hundreds of system functions and structures for manipulating UNIX-specific information. For example, if you want to learn the username of the owner of a file, you can call `stat()` to find the user ID number of the owner, pass that value to `getpwuid()` to look up the user's name, and then print the answer. (See listing.)

```
/* Given a filename as argv[1], print the name of the owner. */

#include <stdio.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <pwd.h>

main(int argc, char *argv[])
{
    struct stat info;      /* A buffer for file information. */
    struct passwd *pw;     /* Pointer to user information. */

    if (argc != 2)
        fprintf(stderr, "Usage: %s filename", argv[0]);

    else if (stat(argv[1], &info) < 0)
        fprintf(stderr, "File %s does not exist.", argv[1]);

    else if ((pw = getpwuid(info.st_uid)) == NULL)
        fprintf(stderr, "I can't find the owner's name!");

    else
        printf("The owner of file %s is named %s.",
```

A major programming advantage of UNIX is that the operating system itself may be modified conveniently: some or all of its source code comes supplied with the UNIX distribution. Recompiling the kernel (the low-level part of UNIX) requires just a few commands. The catch is that the kernel source code itself can be difficult to understand.

## Systems Administration

Remember when you first started using an Amiga? Although you could do some fun things right away, it probably took you a while to set up the Amiga just the way you like it: modifying the *Startup-Sequence* and the *MountList* files, setting up your printer with *Preferences*, changing the screen colors and fonts, installing commercial and public domain software packages, organizing files on the hard drive, making a search path, and so on. A similar process must be done on almost any other computer before you feel completely comfortable using it.

Under UNIX, this process of 'systems administration' is much more complex than under the Amiga operating system, for several reasons. First of all, there is no consistent method for tailoring a UNIX machine. For example, printer setup is done totally differently from network management or electronic mail configuration. There's no equivalent of *Preferences* on UNIX. (Some companies have tried to make such programs, like IBM's *smit* program for AIX UNIX, but these have, interestingly enough, been accused of being



# Public Domain Library

## Guarantee

We believe so strongly in our product that we offer a full lifetime, complete satisfaction guarantee. No questions asked.

We have been the official Public Domain Library of all of the best Amiga magazines. Find out why these magazines choose us! Each of our disks are jam packed with only the best programs. The first two letters on each disk indicate the orientation of the disk; DD# intermediate to advanced - often contains source, WB# general interest - most programs can be run from the workbench, and FD# games and entertainment. Order our disk based catalog and receive a coupon for a complimentary volume with your next purchase. We have always used only SONY blank disks!

## Featured Disk

**FD39a & b: Star Trek, The New Generation** - This is a completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Now with English instructions. Very Excellent!!! Counts as two disks.

## New Disks

**FD66: GameTease2** - Contains playable demos of ChuckRock and Torvak

**FD65: GameTease1** - Contains playable demos of Atomino and Turrican II

**FD64: Games** - Wizzy's Quest - a "great" 50 level game with great graphics, Cubus - a 3-dimensional Tetris type game (rotate and move in 3 dimensions), Husker Du - Colors and pattern rather than shape in this Tetris-esque game; 5 screens and 3 levels of difficulty. Requires Fat Agnus (1 Meg of Chip)

**FD63: Quizshow!** - an interactive multimedia quiz game show program that tests your knowledge of DPaintIII. The questions can be changed so you may quiz on whatever topic you'd like.

**FD62: PomPom Gunner** - An extremely smooth and well done World War II gunner simulation. Requires 1 meg chip memory.

**FD61: Games Solitaire** - great graphics, plays two versions. Kluge: an interesting piece of eye candy. Extreme Violence: 2 player kill or be killed game. YATC: A Tetris clone with Artificial Intelligence. Genesis: create realistic 3d fractal worlds.

**FD60: Games In Nebula** - race over a 3d world to destroy enemy installations. Interferon: a great Dr. Mario clone. Enigma: is it a game or a puzzle?

**WB97: Molecule3D** - An Interactive 3d solid modeling program for molecules; creates stunning 3D pictures of molecules. Disk also includes a mailing list manager.

**WB96: Dupers** - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.

**WB95: Checkbook Accountant 2.0** This program is definitely commercial grade; we've seen many checkbook programs and this is absolutely the best. Full budgeting, transaction recording and report generation.

**WB93: Workbench Extras #2** This disk contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurbuster) and PrintStudio.

**DD80: VFont System** - A font rendering system that extends the Amiga so that it will be able to use vectorized outline fonts. Fast rendering, rotating, and sizing. Use in your own programs!

## Other Great Disks!

**FD5: Tactical Games** - BullRun - a Civil war battle game, Metro you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very habit forming.

**FD6: GAMES!** - This disk is chock full of games including: Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

**FD7: PACMAN** - This disk contains several pacman type games including: PacMan87, MazMan and Zonix.

**FD9: Moria** - This has great graphic controls, multiple spells, similar to Larn and Hack. Play time several weeks!

**FD10: HackLite** - A dungeon adventure game. Considered a must-have classic. This is the second release of this game on the Amiga. Great graphic interface. Play time several weeks!

**FD11: Las Vegas and Card Games** - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features, Also Thirty-One, VideoPoker and more.

**FD12A, FD12B: Star Trek, The Game** - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

**FD13: Board Games** - contains multiplayer Monopoly, Dominoes, Paranoias, and others.

**FD14: Dungeon Master Hints and Arcade Games** - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arkanoid/breakout type game, Trix - a Qix type clone.

**FD17: Educational Games** - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.

**FD20: Tactical Games** - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

**FD26: Arcade Games** - Marble\_slide, this is a truly commercial quality game. Similar to a Lucas game named PipeDreams,

excellent playability and entertainment, Mutants, a small version of the arcade game of the same name, also SuperBreakout a pong/arkanoids type game.

**FD27: Arcade Games** - This disk is loaded with some great games. Includes, Raceorama a great racing car game with ten different courses, MiniBlast a helicopter gunship type clone, Shark in the same class as frogger, and SBreakout the original breakout with more.

**FD29: Shoot'em up's** - WWII - you're the pilot of a WWII plane flying through enemy territory, you've just been spotted, good luck on your mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

**FD31: Games!** - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modern, labyrinth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

**FD32: Flight Simulator** - Includes an instrument flight simulator for a DC10.

**FD33: Arcade Games** - Freddy a mario brothers type of game, Gerbilis a target practice game, Pipeline a German interpretation of Pipe Dreams, Tron a light cycles version, and wetroids a wonderful version of asteroids with a hilarious twist.

**FD35 Omega (v 1.3)** - A new outstanding dungeon and outdoors adventure game in a similar vein as hack, rouge, and



moria. This version is considerably faster and better than all previous versions. Play time several weeks or months.

**FD37a & b: Tactical Games** - Empire (2.2w) This great game comes highly recommended. With a full-graphic front end.

**FD38: Games** - Cribbage Master - A great cribbage game and tutor, Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

**FD44: Game** - Mechlight is an out of this world role-playing adventure comparable to hack and moria. The setting, interplanetary colonies and space stations. In your quest to explore the world, take time out to liberate bad guys of their most valuable possessions, engage in a mortal combat or two against robots and alien life forms, pick up a new amiga 9000. Most of all, don't forget to stay alive...

**FD49: Chaos Cheats** - This disk contains everything you wanted to know about cheat set for Chaos Strikes Back, including full maps, spells, object locations, super characters and more.

**FD50: Submarine Game** - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

**FD52: Classics Games** - PetersQuest a well done Mario brothers type of game, Jymbc a two player missile command clone, and Vstank a tank commander game.

**FD53: Great Arcade** - On this disk is a wonderful implementation of the ever popular classic arcade game Defender. Also contain Air Race a WWII flying ace arcade game, and Psychoblast new creation idea game.

**FD56: Arcade** - Includes SpaceWar, HueyRaid a well done helicopter arcade game, and PowerPong a great expanded pong game.

**FD57: Arcade Games** - Includes 2 true commercial quality games. MegaBall is the successor to Ball; features 5 full musical scores, multiple levels and addicting gameplay. Gravity Attack is a psychedelic trip through several different worlds--each distinctly different.

**FD58: GAMES!** - Includes Steinschlag; a great Tetris clone from Germany with music. SCombat: simulate battle between up to 40 players & monsters. Imperium Romanum: Battle up to 4 players for control of the Mediterranean in this Risk-esque game.

**FD59: Game Potpourri** - Xenon III is an almost exact clone of the commercial game of the same name...a great shoot'em up. Crossword will take lists of words & automatically generate crossword puzzles for any Epson compatible printer.

**WB4: Telecommunication** - This disk contains several excellent pd communication programs designed to get you on line quickly and easily, Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on

the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220

**WB5 - Fonts #1** - Several fonts (35) for the Amiga, also included are five PageStream fonts, and ShowFont - a font display program.

**WB6: Video Fonts #2** - ShowFont(4.0) This program allows you to quickly and painlessly view all 256 characters in a typical font. Large AmigaDOS system fonts (many up to 56pts).

**WB7: Clip Art** - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

**WB9: Icons** - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.

**WB10: Virus Killers** - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).

**WB11: Business** - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and uch more.

**WB12: Disk Utilities** - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!

**WB13: Printer Drivers and Generator** - over 70 different drivers, and if these don't do it, with PrtDrvGen you can make your own.

**WB14: Video** - on this disk are several utilities for the video enthusiast. We have included multiple slides, video titling, Bars and Tone, Gray Scale, Screen fades and swipes, Interlace toggles, and SMPTE Calculators. Also on this disk is a full featured video cataloging program.

**WB15: Business** - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).

**WB16: Business** - This disk contains an inventory manager, a loan analysis program, a great calendar/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.

**WB18: Word/Text Processors** - This disk contains the best editors. Includes, TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features, TexEd(v2.8) an enhanced Emacs type editor, and a spell checker.

**WB20: General Interest** - DiskSalv V1.42 a disk recovery

\$5.95 ea  
1-9 Disks

\$4.95\* ea  
10-24 Disks

\$3.95\* ea  
25+ Disks

\* Anti-Virus Free on all orders with 15 or more disks!

program for all Amiga file systems, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLook gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of an image.

**WB22: Fonts #3** - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.

**WB23: Graphics and Plotting** - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map if image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere, great for DTP.

**WB25: Educational** - On this disk are two programs that can generate maps of differing types. World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

**WB26: Disk Utilities #2** - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor, LabelPrinter - Disk label printer with very powerful features.

**WB27: Nagel** - 26 Patrick Nagel pictures of beautiful women.

**WB29: Graphics and Sound** - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fractal - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, and display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk!

**WB33: Circuit Board Design** - several terrific routines for the electronic enthusiast, including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.

**WB34: Utilities** - Several well done utilities, some will require moderate knowledge of a CLI or Shell for setup, Chatter Box - this one will play any user defined sound after any event (ie. disk insert, mouse click, disk removal...), Artn - The Amiga real time monitor, gives you full control of the Amiga OS, very powerful program, Helper - help program to make learning the CLI easier, and more!

**WB35: 3d Graphics** - This disk contains several neat programs to use with your 3d modeling/raytracing programs 3dFonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptolIFF - create 3d animations preserves pallet, and







# .info technical support

'un-UNIX-like' by members of the UNIX community.)

What is the reason for this inconsistency? Realize that UNIX was written by hundreds of different people over a 20-year period. Although many of the individual programs were carefully crafted in advance, the overall framework was not. UNIX was originally written by programmers and for programmers.

Another reason that UNIX administration is more difficult than the Amiga's is that there simply are more things to administrate! You have multiple printers being used by many machines simultaneously, network connection and data routing, electronic mail, automatic lookup of other computer addresses ('name service'), adding and removing users, automatic startup of programs at regular intervals, system accounting and usage statistics, security tools, and more. And don't forget that these services may be used by many users at once, adding to the complication.

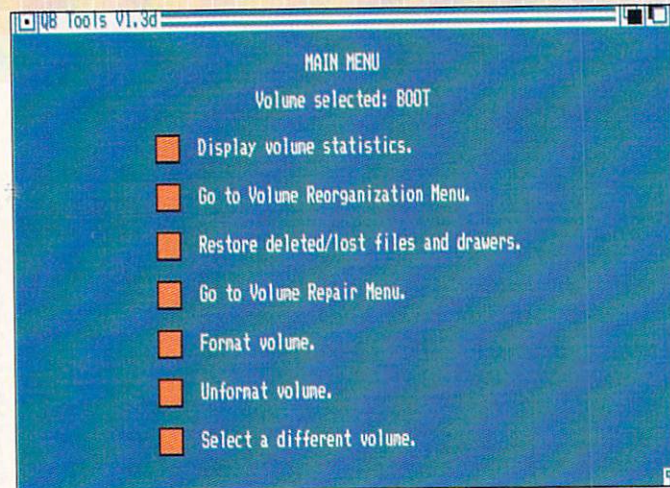
Don't let this difficulty discourage you from using UNIX! If you are a reasonably intelligent person with programming experience who likes to learn about computers, then UNIX systems administration is within your abilities. If you encounter problems that you do not know how to solve, don't panic. UNIX has been around long enough that many problems have already been solved by someone else. If you have access to USENET or other electronic news services, you will find thousands of people willing to help you.

## Do I Need UNIX?

Serious programmers should definitely check out UNIX. With its large selection of languages, tools, and shells, UNIX can be a great development environment. Amiga power users may also find UNIX to be useful and fun, especially if they like to explore and tailor the computer environment to its fullest.

## Suggested Reading

Assuming that you already know C, here are some good UNIX programming books. *Using C On The UNIX System* by David A. Curry (O'Reilly & Associates, Inc., 1989) is an excellent



QuarterBack  
Tools  
main menu  
screen

guide containing many example programs. This book is one in a series of 'Nutshell Handbooks' that are enjoyed and recommended by many UNIX programmers. After this introduction, check out *Advanced UNIX Programming* by Marc J. Rochkind (Prentice-Hall, 1985) for more in-depth information. Low-level operating system information may be found in *The Design Of The UNIX Operating System* by Maurice Bach (Prentice-Hall, 1986). To learn more about systems administration, see *UNIX System Administration* by David Fiedler and Bruce Hunter (Hayden Book Company, 1986). ■

## About the Author

Daniel Barrett is a long-time Amiga user and UNIX systems administrator.

His Internet EMail address is:  
barrett@cs.umass.edu

## Quarterback Tools by David Martin

If you were to ask my brother Andrew about the kind of software that I buy he'd probably respond with a sour face and spit out the word "Utilities!" I must confess that this is very true. Much to my brother's disappointment, I tend to purchase utilities more than anything else. This doesn't mean that I'm not any fun - I do

have some favorite games (i.e. *Lemmings*, *Pocoman*), but I'm always looking for something to make my computing life safer and easier.

As a programmer, the protection of my data is very important to me. That's why I back up my hard disk on a regular basis. But even though backing up software *is* important, there have been times when I needed more than just a good backup to save a file or program. That's where a product like *Quarterback Tools* (QBT) comes in. Just having it around makes me feel a little bit safer. Imagine accidentally deleting the newest version of the source file for a program you're writing, or getting the dreaded "Read/Write Error" requester. What would you do? Panic? No, you would use QBT to save the day!

## Vroooooom!

One of QBT's major attractions is its ability to reorganize a disk so that data access is faster. This is done by rewriting the files so that they are not fragmented. Fragmented files have their data blocks spread all over a disk, but once they are reorganized they appear as one long list of contiguous blocks. This speeds up data access by reducing head movement.

Using QBT's reorganizer is easy. First you select the type of reorganization you wish to perform: Workbench or CLI. The Workbench version optimizes access to icon files, while the CLI version treats all files equally. Before starting the reorganization, QBT suggests that you back up the disk you wish to



# .info technical support

reorganize, just in case there's a power failure or other disaster halfway through.

The actual reorganization process begins after an integrity check of the disk, which is provided as a means of making sure the media being written to is valid. Failure to check the media can result in disaster during the reorganization. By doing this test, *QBT* can lock out bad blocks and prevent them from being used.

After the integrity check, *QBT* begins reorganization. This process can take a considerable amount of time, depending on the size of your disk.

## File Restoration

*QBT* also offers features that let you recover lost or deleted files and directories. This "undeletion" feature saves your keister in those situations when you've misused a wildcard or accidentally deleted that all-important source file you worked so hard to perfect. Unfortunately, recovery of deleted AmigaDOS

### Quarterback Tools V1.3d

★★★★+

\$89.95

Central Coast Software/

New Horizons

206 Wild Basin Road, Suite 109

Austin, TX 78746, 512-328-6650

files under the Original File System is not 100% reliable due to the way AmigaDOS (V1.2 and V1.3) works. Some loss of data may occur, with one or more files being unrecoverable. Overall, *QBT* works well when undeleting, though it works better with FFS files.

## Disk Repair

*QBT* can also be used to repair damaged AmigaDOS disks. Using this utility, you can recover many lost and damaged files or directories that may be corrupted due to bad characters in a file name, illegal date/time stamps,

bitmap errors, checksum errors, etc. You can even have *QBT* mark unreadable disk blocks as "out of service," preventing them from being used to store data later.

The repair process is quite extensive, but not even *QBT* can save every piece of data on a disk. Once again, 100% reliability cannot be expected because of the nature of the media. The manual fully explains the limitations of the program, but overall it does a fine job of repairing most problems that occur.

## Disk Formatting

*QBT*'s disk formatting feature lets you format disks in a safe manner, according to the manual. How is this accomplished? *QBT* does not actually format the disk - it only modifies the disk's root and bitmap blocks. After doing so, AmigaDOS now thinks the disk contains no data. (Actually it does contain one small file called 'QBT.FMT' which contains the old root and bitmap block information. Using the data in this

**NEW!**  
Version 3

## MAVERICK for the AMIGA

Five Years Of Experience On A Single Disk

When we started making Commodore backup products, we started making history. Our Maverick for the Commodore has become the single most successful archival utility system ever created for the C64 C128 computers. We pioneered innovations that made Maverick the ONLY logical choice for the serious user.

History is repeating itself.

Our new Maverick for the Amiga is a ground breaking product! It is unlike anything you've ever seen for the Amiga before. You use it without fumbling for pull-down menus or searching through overlapping windows. The Maverick Amiga screen is a clean, modern control panel designed to allow you to intuitively operate the system as if it were a physical piece of hi-tech equipment.

Options abound. These include features like:

- ★ Hypercopy: High speed, effortless, error free data duplication.
  - ★ Parameters: Our own custom routines backed by 5 years of experience.
  - ★ OverRide™: A new tool that makes a program useable on a hard drive by COMPLETELY de-protecting it!
  - ★ Inspector: Our MFM track editor featuring whole track or data block modification capability macros for automation and best of all - Backup Buddy™ compatible!
  - ★ Backup Buddy™ support to allow easy, reliable backups of some of the toughest to duplicate titles on the market.
  - ★ Over 100 new parameters keep you up to date with today's software releases.
- There's more: For a minimal fee, registered Maverick owners can upgrade their system to the newest version, including new parameters every 90 days! Maverick Amiga was actually designed with future expansion capabilities built right in. And experienced users can even create and store their own custom copiers, accessible right from the main control panel, just as if they were built into Maverick from the factory! When you're ready to spend your hard earned money for an Amiga backup utility, keep this in mind: There are lots of copiers on the market, but there's only one complete archival utility system — Maverick.

**MAVERICK AMIGA V3**

ONLY **\$39<sup>95</sup>** + S&H

Available from your local dealer or contact us directly:



**A MAN'S BEST FRIEND  
IS HIS DOG  
AN AMIGA'S  
BEST FRIEND IS THE  
'BACKUP BUDDY'™**

Ready to add another drive to your system? We've got some good news for you: for nearly the same price as an ordinary drive, you can buy the brand new Maverick Amiga 'Backup Buddy' drive!

The 'Backup Buddy' drive (sold ONLY to registered Maverick Amiga owners) is a superb Golden Image drive that we've worked our special magic on. We've added our own custom engineered speed control circuitry to create a unique new tool. Used alone, the 'Backup Buddy' is as fast, reliable, and compatible as any other Amiga external disk drive. But, used with the Maverick Amiga, the 'Backup Buddy' becomes the newest weapon in the Archival Utility System arsenal, easily letting you backup titles that could NEVER be reliably duplicate before now! The 'Backup Buddy' is another demonstration of our commitment to the Maverick tradition: Always be the best.

**THE 'Backup Buddy' DISK DRIVE**

ONLY **\$149<sup>95</sup>** + S&H

Available Only From Software Support International  
to registered Maverick Amiga owners.

## SOFTWARE SUPPORT INTERNATIONAL

2700 N.E. ANDRESEN ROAD • SUITE A-10 • VANCOUVER, WASHINGTON 98661

Write or call us for more information or our current  
catalog listing 1000's of items for your computer

**1-800-356-1179**



# .info technical support

file, *QBT* can perform an 'unformat.')

The whole idea here is that *QBT* never completely formats the disk. It performs a high-level format similar to AmigaDOS's 'quick' format option. The lack of a low-level format bothers me, since without one a disk can continue to accumulate errors that would otherwise be taken care of. This does not mean that *QBT* does not support a full format: it does, but only when a disk is invalid.

I personally do not think that it is wise to substitute *QBT*'s format as a replacement for the AmigaDOS format command. Instead, keep both at hand and ready-to-use as their purpose suits you. The special formatting methods used by *QBT* are the only features of the package that I will not be using myself.

## ARexx Support

Like most powerful Amiga programs of the past year, *QBT* offers an extensive ARexx port that allows you to fully automate its execution. This means you can schedule reorganizations after backups, etc. There is no end to the uses you can think up for this feature. ARexx support is definitely a welcome addition.

## Conclusion

As I mentioned at the beginning of this review, the protection of data on my disks is very important to me. *Quarterback Tools* gives me some measure of safety, and a great deal of peace of mind. So my brother is out of luck again, since I'm off to the store to buy my own copy of *Quarterback Tools*. I can just see his face now: "Blech!" ■

## Point/CounterPoint

Workbench vs. CLI

by Nick Sullivan and  
Chris Zamara

**N**ormally in this section, we would present a technical topic in the form of a standard article. Some topics, however, are best explored in a dialogue of opposing viewpoints. While the authors for the most part enjoy an agreeable, collabora-

tive working relationship, there are a few bones of contention that serve to make life a little more interesting. Here we thrash out one of these.

Long before the mouse and icons of the GUI (Graphical User Interface), computer users typed commands at consoles and saw text printed out or displayed on a screen. MS/DOS is an example of a command-based user interface, while the Macintosh uses a GUI. On the Amiga, we have both: the CLI/Shell for commands, and the Workbench for point-and-click. Which is better? Is the GUI really a step forward, or just a gimmick? A friendly debate may be a good way to explore some of the arguments on both sides...

**Nick:** Sure, Workbench and its icons can be helpful, to beginners - just as children learn to read with the aid of a picture-book. But once you know a bit about the computer and the filing system, it's only through the command interface that you can realize their full potential.

**Chris:** Just because something is easy to learn doesn't mean it's useful *only* for beginners. Maybe you *can* do more from the CLI, but for 95% of what you do, the Workbench is easier, faster, and more intuitive.

**Nick:** Intuitive? That's a word I hear a lot. Who says that pictures are more intuitive than words, once you've mastered the concepts? I don't find anything un-intuitive about typing a command or a command-line option, thank you very much. As for easier and faster, baloney! Given a well-written set of shell aliases, I'll match your mouse clicks with my command lines any day of the week.

**Chris:** Well, I don't know about you, but it seems to me that dropping an icon into a drawer to move a file is a just wee bit more intuitive than using a 'Rename' command and typing the same file name twice. And a fair bit quicker, too, especially for long filenames. This is just one example, of course, and I can supply several more if you have the time.

**Nick:** Come on, Chris, a symbol is a

symbol whether it's text or graphics. And while you're fumbling around with both the mouse *and* the keyboard, I'll be done in half the time, even if I do have a few extra characters to type. You'll still be struggling to rename that file, while I'm down sunbathing in Rio!

**Chris:** Just the place to go if you insist on burying your head in the sand! But seriously, who *needs* two different input methods? I plop a disk in the machine, and I instantly see what it's called without typing 'Info' or whatever command you need these days. A simple click shows me what's there, and the program I need is up and running in seconds. No 'Dir' or 'List' to see what's on the disk and what the files are called. And I can always tell programs from data by the look of the icons!

**Nick:** You mean 'tools' from 'projects'...

**Chris:** I was translating for your benefit.

**Nick:** Well, I agree with you. Surprised? In the circumstances you describe, the Workbench may have certain advantages. But - and this is a big 'but' - those circumstances aren't typical operations for me. Normally, when I want to run a program, I type its name - I don't have to go looking for it. The kind of browsing you're talking about is a special case, and even for that there are several utilities that give me functionality comparable to the Workbench - if not quite as appealing to the eye.

**Chris:** You can talk all you like about specific programs that you can run from the CLI, but from an overall perspective, life in the Workbench is just more pleasant. Tasks seem easier and more efficient, and I prefer to work that way even if a speedy typist *could* keep up to me using a flurry of CLI commands.

**Nick:** Let's face it, Chris: the Workbench is only useful if the only thing you do is run application programs. The serious computerist - and I'm talking about hobbyists here, too, not just professionals - needs the flexibility you only get with a command line. Want an example? How about pattern matching? How about searching your



# .info technical support

documents directory for that particular fragment of text? It all goes back to what I said in the first place - if you're a novice, the Workbench may be all you need. Otherwise, uh-uh.

**Chris:** I didn't say you should *never* use the CLI. But if you don't take advantage of the Workbench, and simply stick to typing commands, you're missing out on a whole lot of what makes the Amiga great. If you want an MS/DOS machine, why don't you buy one? The fact that we can use either type of interface - or both - is what gives us the best of the Macintosh and the PC. And if command-based computing is superior to the GUI, why is the world turning away from it? Can you say, "Windows?"

**Nick:** I thought we were talking about *using* computers, not *selling* them. Just because IBM and Microsoft can see the profit potential behind the "GUI" buzzword, doesn't persuade me it's a better way of doing things. Besides, I like the

Amiga for the *real* advances it represents - the multitasking, the custom chips. The Workbench is just window-dressing (or should I say, "Windows"-dressing), as far as I'm concerned!

**Chris:** Sneer if you must, but marketing only works if it appeals to what people want. Look what happened to the IBM PCjr - it doesn't matter what IBM sells if it's no good. Let's face it - the GUI is the way of the future, and so is Workbench on the Amiga.

**Nick:** Okay, I'll tell you the truth: I do use the Workbench from time to time, and I'm glad - really - that Commodore realized the importance of a GUI for the Amiga. I'll even grant you that some users might never 'graduate' to the CLI or the Shell - and never realize that they've missed anything. But I still maintain that if you want to exploit the full power of the Amiga, the CLI is the only way to go.

**Chris:** Well, to tell *you* the truth, I don't

use the Workbench exclusively myself. When I'm programming, for example, I use the Shell. And there *are* some things it lets me do that would be impractical or even impossible from the Workbench. But that's more a reflection of the limitations of current software than of the Workbench *per se*. Macintosh users get along quite well without a CLI - without a command interface - because software has evolved in that environment. On the other hand, I wouldn't give up the CLI on my Amiga for a whole diskful of icons!

**Nick:** I guess only time will tell whether Workbench really is the wave of the future. We'll have to get together in twenty years or so and discuss this again! ■

## About the Authors

Nick Sullivan and Chris Zamara are the editors of .info technical support. They were once the editors of the *Amiga Transactor*.

# DataFlyer

Simply the best SCSI hard drive  
controller for the money  
...maybe better.

Faster than GVP under contention, AMAXII and Syquest  
compatible, mouse button game switch, optional plug-on  
8 megabyte RAM card, "Auto-Install" format software.

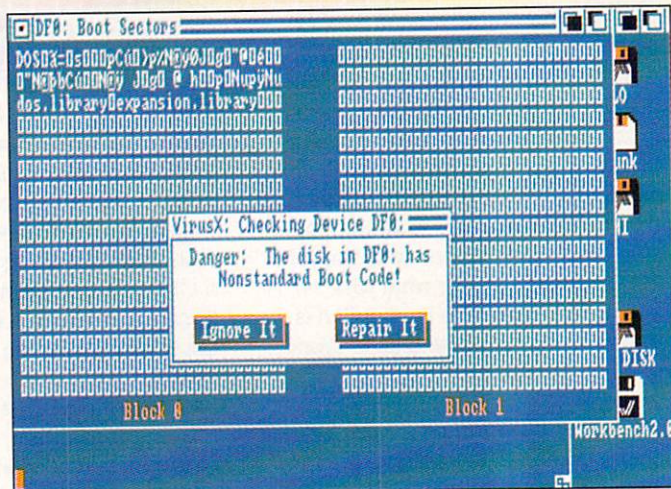
DataFlyer 2000	\$99.95
DataFlyer 500	\$189.95
DataFlyer RAM	\$119.95*

**EXPANSION**  
**S Y S T E M S**  
**5 1 0 6 5 6 - 2 8 9 0**

Expansion Systems 44862 Osgood Rd. Fremont California 94539 U.S.A. Fax 510 656-3152 DataFlyer 500, DataFlyer RAM are trademarks of Expansion Systems ©1991 Expansion Systems. \*DataFlyer RAM price is without memory. This ad is small but so are our prices.



V4 of Steve Tibbett's VirusX doesn't like Workbench 2.0.



## Checking Out Programs

When Hallowe'en is the same as Christmas  
by Jim Butterfield

User group librarians and bulletin board system (BBS) operators have a common problem. They get a lot of programs, and it's hard to tell the good ones from the bad.

Users get most programs from their user group, or by means of downloads from BBS services. A librarian or BBS operator works hard to gather this material. Is most of the feedback from grateful users? Nope. Most often, it will be cries of protest if a 'bad' program should happen to find its way into the collection.

What makes a bad program - and how can you spot such a beast before it goes into distribution? On another level: can one person find a program quite acceptable, while another does not? Is the question of 'bad' and 'good' programs often just an exercise in coding snobbery?

I'm not sure I have answers to these questions, but I'll be putting forth some ideas in the paragraphs that follow.

### Types of 'BAD' Programs

**A Virus program:** Such a program secretly makes copies of itself to other disks; you may not know it's there. There are many types of virus, some relatively harmless and some

very nasty indeed. There's even one that says that its purpose is to keep other viruses away. Regardless, a virus is an unplanned activity within your Amiga: you don't want it there, and you don't want it to spread further.

**A Trojan/Bomb program:** A cousin to the virus. This kind of program doesn't propagate itself. It seems useful; then, one day (Friday the 13th, for example) it strikes out with a completely unexpected action. Perhaps it just says BOO! Then again, perhaps it wipes all programs from your disk.

**Commercial theft:** A commercial program, perhaps with its protection scheme and copyright statement removed, possibly with some features changed. You can end up in court if you handle these; nobody wants that kind of hassle.

**Enemy of multitasking:** A program that won't co-exist with other programs within the Amiga. Maybe it grabs the whole screen and won't let go; maybe it wrecks other programs by using their memory; maybe it insists on a specific drive, say df0:, even when some other program is trying to use it. Use one of these, and you're throwing away one of the most attractive features of the Amiga.

**Litterbug program:** Most often, this kind of program asks the Amiga for memory, and then never gives it

back. Every time you run it, your computer has less memory - until you reboot. There are other types of resource grabs: a badly written program could seal off various parts of your computer's I/O, such as the audio channel, the serial port, or your printer. And I hate programs that start to play music, but won't stop.

**Doesn't work right:** If your distance-calculating program tells you that New York to Dallas is five miles, you have good reason to doubt the correctness of the program or its data files. There's little point in having a mortgage program that calculates incorrect amounts, a word processor that sometimes loses part of your document, or a chess game that makes illegal moves. It's a programming witticism that Hallowe'en is the same as Christmas, since OCT 31 = DEC 25 (if you're not familiar with octal numbering, ask a technical friend). But you don't really want a calendar program that mixes up the two dates.

**Not Good Coding Practice:** people argue about this one. If a program works correctly, can those on the upper cloud levels fairly argue that it's unacceptable because it doesn't follow good coding rules? They often can, on the Amiga. A program has to do more than work correctly: it must also live harmoniously with other programs... and if it's well constructed, it will probably pass happily through upgrades such as DOS 2.0 and those beyond.

### I get nervous When...

Perhaps I'm paranoid about programs of uncertain origin, but it seems to me you can't be too careful. Here are some items I've seen lately. Some of them are, well, okay... but they still ring warning bells.

A coding fragment received from the Middle East created a program pause by fiddling with the hardware timer (up in the \$BFE.. area of memory). Wrong! DOS function Delay() would do the job just as well, and would allow other tasks to run during the pause time. In addition: You don't play with the hardware without first making application to



# .info technical support

*cia.resource*; by doing so, you avoid collision with other programs trying to do the same thing.

A screen-blanker program usually works at a high priority. Such a program tells the timer to wake it up after a set delay, and also awakes occasionally to sniff the input stream for activity. But a recent blanker program reverses the process; this one works at a very low priority and runs all the time unless a higher priority task interrupts it. Well... possible, but you must realize that only *one* task can pull that trick: once you've grabbed all the Amiga's remaining time, lower priority tasks will never see daylight. Not too serious, and the author does document this. But this particular program features another gimmick: timing and input are detected by looking directly at the hardware chips. As already mentioned, that's not too good a practice. A lone program can get away with this kind of thing... but the multitasking Amiga may get unhappy with many tasks roaming around the hardware area.

Lately, I've started to see programs that contain unreadable sections. They may be encrypted to prevent anyone from looking at them; or they may simply be compacted to save disk space. But they make me nervous; any program that seems to contain secrets might possibly contain surprises.

## How to spot them

There are many facilities available to the knowledgeable librarian. Even more are in the hands of registered Commodore developers. Some are mentioned below.

I'll talk about some less technical considerations in a moment. But first, the mechanics.

**Virus programs:** Many virus programs reside in the disk 'bootblock' and propagate to other disks by writing a copy of themselves into their bootblock sectors. The classic bootblock virus checker is VirusX, by Steve Tibbett; it's re-issued periodically, so

look for a recent version. VirusX usually comes with a program names KV to detect the 'IRQ' style virus, which propagates without using the disk bootblock.

The New Orleans Commodore Computer Klub (NOCK) issues a disk called 'InNockulation,' which is full of anti-virus material. Write NOCK for information on the current version at: 3701 Division St., Suite 140, Metairie, LA 70002.

There are other programs to detect or remove viruses from your Amiga. I've heard good reports about a new compilation of programs, the 'Speedy Gonzales Superkillers' disk.

**Trojan/Bomb programs:** These are difficult to spot. Source code supplied with the program can be of great help in assuring you that there are no surprises lying in wait for you. Technically adept users can investigate the inner workings of a program using debug packages or disassemblers such as *ReSource*.

## Easy as 1.2.3.

It's easy to get more information on products written about and advertised in *.info*. Most advertisements and new product listings have a special coded reader service number to help you get brochures, flyers and other literature about the products you like in *.info*.



1 Fill out the reader service card you'll find in this issue of *.info*.

2 Circle the numbers coded for those products you want more information about.

3 Just drop it in the mail. Most companies send information right away.

## THE GRAPEVINE GROUP, INC.

AMIGA

COMPARE OUR PRICES

AMIGA

### UPGRADES-REPLACEMENT CHIPS

Fatter Agnus (8372A)..... see below  
8362 Denise.....\$24.95  
8364 Paula.....\$24.95  
Super Denise (new) 8373.....\$69.95  
5719 Gary chip.....\$12.95  
8520A CIA chip.....\$14.95  
1.3 ROM Kickstart.....\$24.95  
A500 Keyboard.....Call  
AT Bridgeboard (refurb.).....\$36.00

### DIAGNOSTICS

SAMS Computerfacts.....Call  
Dr. Ami (software).....\$29.35  
AMI Alignment System.....\$28.50  
Low cost/remanu.printheads.....Call

### ICD PRODUCTS

**A500 Products**  
AdRAM 540 1 Meg.....\$131.95  
Each add. Meg of RAM.....35.00  
**A2000 Products**  
AdRAM 2080 0K.....\$114.50  
Each add. 2 Megs of RAM.....70.00  
AdSCSI 2000.....\$127.50  
AdSCSI 2080 0K.....\$177.95  
Each add. Meg of RAM.....44.00  
AdSpeed.....\$203.95  
Flicker Free Video.....\$274.00

**Enhanced Chip Set  
Super Denise 8373**  
with productivity mode, etc. An  
absolute must with 2.0  
**69.95**

### MEMORY EXPANSION

512K (A501) RAM Mod.....\$49.50  
1x4/80 SC Zip for A3000.....\$24.95  
1x1/100 NS.....\$4.95  
256x4/120 all ICD, GVP, etc.....\$4.95  
1x8/80 SIMM.....\$43.95  
HP Laser Memory Board  
1 Meg.....\$97.50  
2 Megs.....\$137.95  
4 Megs.....\$199.95  
Insider II BD for A1000.....\$265.50

### MISC. PRODUCTS

A500 45 watt (hvy duty) power  
supply.....\$67.50  
FlickerFixer.....\$229.95  
Printer Port Adapter (runs any  
CBM printer to PC).....\$34.95  
KB Talker-use any PC keybd.....\$39.95

### HOT AMIGA UPGRADES

1802 Color Monitor Special - Refurbished by Commodore. Includes 90 day warranty and cables. Looks real mint. Excellent for Video Toaster as a broadcast or preview monitor.....\$119.00  
MegACHip 2000 - Upgrade your A2000 to 2MB of chip RAM. Includes A3000 2 MB Agnus chip.....\$329.95  
less substantial rebate. MegACHip 2000 now available for your A500. FREE Rockwell chip puller and diagnostic Agnus diskette program with either.  
Fatter Agnus (8372A) 1 MB w/Rockwell chip puller (a necessity) and instructions.....\$69.95  
Multistart II - NEW ROM switch for 3 ROMs for A500/2000 Keyboard Controlled.....\$77.77  
Switch Activated Version.....\$37.95  
150 Watt "Big Foot" A500 Universal Switching Power Supply with fan. An absolute must for those adding on more memory.....\$83.95  
Emergency Amiga Startup Kit - Sold to government PXs and now available to all. Kit has all major chips, parts, schematic, instructions and diagnostic software programs, Agnus, etc (everything needed to get it started).....\$99.50  
Rejuvenator A1000- Upgrade board with everything, including diagnostic software package (\$30 value), 1.3 ROM, Meg of RAM.....\$488.00  
Diagnostic Trouble-shooting Software (STU), a terrific diagnostic package & absolute must (all Amigas) by Custom Services, Inc.....\$29.95  
Amiga Diagnostician - Diagnose up to 28 common problems, comes with software and booklet. Save lots of money by locating faulty chips yourself.....\$14.95

### SEND FOR OUR FREE 36 PAGE CATALOG



3 Chestnut Street • Suffern, NY 10901

Order line only 1-800-292-7445

Customer Service (914)357-2424 Fax (914) 357-6243



Prices subject to change

Add UPS charges to above

Hours: 9-6 EST M-F

We ship worldwide

Circle #177 on the Reader Service Card



# .info technical support

**Commercial thefts:** A memory scan (the crude way is *type hex*) will often turn up information on the commercial source, even if the copyright screen and protection systems have been removed.

**Enemies of multitasking:** Some programs make it obvious: they take over the machine. For others, it's best to have somebody with a technical background examine the program.

**Litterbug programs:** To test for memory gobblers: open a CLI window, run the program, type *AVAIL*, run the program again and type *AVAIL* again. Provided you don't do anything silly like changing the size of your CLI window, you should get the same memory each time. Note that this isn't true if you type *AVAIL* at the start: the first run of program may bring in libraries or other items that will legitimately stay in memory after the run. (They will be kicked out if you become short of space).

**Don't work right:** Check out the most obvious things, such as if the program loads and saves data correctly. If there are calculations, check them by hand or against reference data, if possible. If your astronomy program says the sun will rise today at 5:10 am, get up early, or stay awake, and check it out.

**Not Good Coding Practice:** Somebody has to look at the coding. Then you must decide how to classify any reported difficulty. Is it trivial, so that you can ignore it or add a small note to the distribution? Moderate, so that it should be released with cautionary notes?

## Know Your Source

There are practical checks that are often more useful than technical considerations. If you know that the program was written by a trustworthy person - or a person that you know you can get back to in case of problems - you can feel relatively safe. If the program is readable - in Basic, or accompanied by source code - you can be

## Program Sources

**VirusX:** Updated periodically, and a new version is said to be imminent. Check for the most recent version on recent AmigaLibDisk ('Fish') releases.

**XOper:** Again, the most direct source is AmigaLibDisk. My current version is *XOper12*.

**ReSource:** There's more than one version, depending on the model of Amiga you have. Write: The Puzzle Factory, PO Box 986 Veneta, OR 97487. Phone: (503) 935-3709.

reassured. And if the program came through a trustworthy pipeline, it can likely be trusted.

Sadly, there have been virus programs carrying fake author identities; be sure the program is really from the claimed author. A phone number or address is reassuring; it generally means that the author will take responsibility for what's in the program.

**Major distribution networks:** National BBS download or disk libraries such as the 'Fish' disks are fairly secure. Even if a problem slips through, it will be spotted and reported quickly.

**Source included:** Even Steve Tibbett's *VirusX* comes with the 'source program,' to help guard against fake versions. You may read such a source file and assemble it yourself to confirm that it indeed does what it claims to do. BBS/librarians would find source code reassuring, even if not intended for distribution.

## Technical Resources

There are many programs that will help the technical type snoop a program's performance. Some are included as part of the disk collections mentioned above. Here are some others that I've found useful.

**XOper:** This is a rich program for peering into the inner workings of your Amiga. There's a whole labyrinth of

mechanisms in there, ticking along like clockwork; if you're looking for the cuckoo, pay special attention to Tasks. Some programs spin off extra tasks that have an independent life of their own. Sometimes that's good. But if a program stops, yet leaves some part of itself running in the system, you should know why.

**Debug programs:** Many debug programs allow you to load a program into memory without starting it up. You may then inspect memory for unpleasant messages or curious code. If part of the program is encrypted, it's even possible to put a breakpoint into the program, and allow it to run the decryption routines... but no more.

**ReSource:** this commercial program by Glen McDiarmid will perform a disassembly of most programs with little effort on your part. You don't need to read the code, although sometimes that's interesting, too. Just look for peculiar messages and encrypted sections. With a little more effort, you can identify the system calls made by the program. So, for example, if you see a music program hitting hardware addresses or invoking Trackdisk... look out! It may be marching to the beat of a different drummer.

**Commodore Developer Debug Tools:** Commodore supplies registered developers with a whole set of debugging and testing tools. Many of them call for the use of an extra 9600-baud terminal, and some must be run on an Amiga that's fitted with an MMU (Memory-Management Unit) chip or 68030 processor. But they are very good at spotting a program that's breaking the rules.

## Last Thought

If you plan to look at a program that you suspect of possible problems, there are a few precautions you can take. The programs that I look at most closely are those that involve themselves with disk operations: copying, file reorganization, protection system defeat, and similar items.

If you have a hard disk system, take it out (logically, not physically) when



# .info technical support

you're doing such tests. Hard disks don't have write protect tabs; if a bad program wants to do damage there, it can really make a mess. The way to take out your hard disk: boot your Amiga from a Workbench floppy in df0: and your hard disk won't be mounted for this session. Start by installing a resident virus checker into your system. Something like *VirusX* will run in the background, and will check all disks that are subsequently inserted.

Any floppy disks of your own that you insert in the test system should be copies, not originals. Keep the write protect on, unless you're testing a program that is intended to write to a disk. In the latter case, check the changed floppy very carefully, comparing its contents and size to that of the original.

And when you're finished: turn the power switch off. Don't use the three-key reboot (Ctrl, Left-Amiga, Right-Amiga) unless you're sure the system is safe. ■

## Commodore Development Tools

Request an application for the Commodore-Amiga development programs by writing: CATS-Information, 1200 West Wilson Drive, West Chester, PA 19380-4231. Include a self-addressed, stamped, 9" x 12" envelope.

Commodore's Test Programs for Developers.

*memung* and *mungwall* - watches memory, especially for illegal calls to FreeMem. It also watches to check that a program does not write outside the memory area that it has requested.

*io\_torture* - watches IO requests.

*Enforcer* - uses the MMU; reports any attempts made by a program to access "illegal" memory.

*memoration* (William S. Hawes) - fakes a low memory situation and observes program behavior.

There are many other programs: *flush* and *wack*, for example. The above are recently introduced powerful test tools.

## Advertisers' Index

Reader Service #	Advertiser	Page
143	Consultron	65
140	Devware	56, 57
112	Electronic Arts	13
110	Expansion Systems	61
177	Grapevine Group, The	63
104	Konami	5
103	Konami	33
169	Montgomery Grant	66
130	NewTek	68
173	Power Computing	53
102	Psygnosis	3
115	Psygnosis	2
170	RCS Management	67
106	ReadySoft, Inc	7
107	ReadySoft, Inc	11
136	Software Support International	17
114	Software Support International	59
160	SoftWood, Inc	27
165	U.S. Gold	9

Do you feel like the  
**Bridgeboard™** and the Amiga®  
are worlds apart?

Good News!!

The **Ambassador™**

has been appointed to establish efficient lines of communication. The *Ambassador* improves file transfer capability for both the Bridgeboard and the Amiga in a transparent fashion. The *Ambassador* is 100% software. No additional hardware to buy or install.

From the **Bridgeboard:**

- Directly access the Amiga-connected floppy drives as MS-DOS® drives from within most MS-DOS® programs.
- Receive up to a 100 times speed increase when using our version of the PC virtual hard drive partitions.

From the **Amiga:**

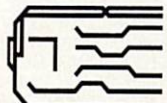
- Access MS-DOS formatted media using the same features as our five star rated product **CrossDOS™**.
- Access Bridgeboard created virtual hard drive partitions (such as MakeAB and JLink files).

Suggested List: **\$79<sup>95</sup>**

CrossDOS owner upgrades available.

If you need to read and write MS-DOS® disks but do not have a Bridgeboard, consider **CrossDOS™**. It allows the Amiga to directly read and write 360K, 720K and 1.44M MS-DOS® disks.

**CrossDOS™**  
is only:  
**\$39<sup>95</sup>**



**CONSULTRON**

11280 Parkview  
Plymouth, MI 48170

Technical Support  
(313) 459-7271

Amiga is a registered trademark of Commodore-Amiga, Inc. Bridgeboard is a trademark of Commodore-Amiga, Inc. MS-DOS is a registered trademark of Microsoft, Inc.

Circle #143 on the Reader Service Card



FOR ORDERS AND  
INFORMATION IN  
USA & CANADA CALL

**1-800-759-6565**

Order Hours: Mon-Thurs, 9am-7pm/Fri, 9am-5pm/CLOSED Sat/OPEN Sun, 9:30-6(ET)

# MONTGOMERY GRANT

INFO  
11/91

OUTSIDE USA  
& CANADA CALL

**(718)965-9066**

OR  
WRITE TO:

MONTGOMERY GRANT: MAIL ORDER DEPT.  
33 34th ST., DEPT. A, BROOKLYN, N.Y. 11232  
FAX #7189658689 / TELEX 422132 MGRANT

RETAIL OUTLET PENN STATION, MAIN CONCOURSE  
(Beneath Madison Sq. Garden) NYC, 10001

Store Hrs: MON-THURS, 9:30-7 / FRI, 8:30-5 / SAT-CLOSED / OPEN SUN, 9:30-7

ESTABLISHED  
1967

## VIDEO TOASTER

CALL FOR OUR LOW, LOW PRICE

NEWTEK VIDEO TOASTER BOX ALL  
IN ONE VIDEO PRODUCTION SYSTEM

CALL

PERSONAL TBC.....\$729

MANY OTHER TIME BASE CORRECTORS  
(TBC) AVAILABLE

TOASTER TUTORIAL VIDEO CASSETTE  
\$19.95

**AMIGA 500 \$469**

AMIGA 500P.....CALL

## AMIGA PERIPHERALS

A-2088D XT BRIDGEBOARD.....\$449  
A-2286D AT BRIDGEBOARD.....\$599  
A-2630/4 ACCELERATOR  
KIT (25MHz, 68030, 4MB, 68882).....\$1499  
A-1680 MODEM w/CABLE.....\$69

1084 RGB  
COLOR  
MONITOR  
\$279

## AMIGA COMPATIBLE PERIPHERALS, ACCESSORIES & SOFTWARE

A-MAX EMULATOR II.....\$129  
AMIGA 3000 32 Bit Memory.....AVAILABLE  
AMIGAVISION SOFTWARE.....\$89  
AMIGA 1.3 ROM (8850).....\$49  
AMIGA 1MB FATTER AGNUS CHIP(8372A).....\$99  
APPLIED ENGINEERING  
1.52MB HI-DENSITY DRIVE.....\$199  
ATonce PC/AT EMULATOR.....\$249  
A-2000 ADAPTOR.....IN STOCK

### GENLOCKS

MINIGEN.....\$184  
SUPERGEN.....\$599  
SUPERGEN 2000S.....\$1339  
VIDTECH SCANLOCK.....\$759  
VIDTECH VIDEO MASTER.....\$1049

### GOLDEN IMAGE

HANDSCANNER  
w/MICROGRAPH TOUCH-UP.....\$239  
OPTO-MECH MOUSE.....\$35  
OPTICAL MOUSE.....\$49  
HAME.....\$295  
HAME/PLUS.....\$379

### ICD

ICD ADIDE.....\$89  
ICD NOVA 201  
20MB INTERNAL DRIVE for A-500.....\$479  
ICD ADSPEED Excellerator (14.3MHz).....\$205  
ICD FLICKER FREE VIDEO.....\$279  
NEW PRIMA 521.....\$429  
NEW PRIMA 1051.....\$599

### INSIDER II Internal Memory for A-1000

OK Expandable to 1.5MB

512K.....\$219 1MB.....\$249 1.5MB.....\$279

IMAGINE.....\$189  
LATTICE C5.1.....\$189  
LATTICE C++.....\$99  
LIVE/ A-2000.....\$279  
MASTER 3A-13.5" DISK DRIVE.....\$479  
MEGA-MIDGET ECONOMY (25MHz).....\$79  
MEGA-MIDGET ECONOMY (33MHz).....\$559  
MEGA-MIDGET RACER (25MHz).....\$559  
MEGA-MIDGET RACER (33MHz).....\$679  
MEGA-MIDGET RACER (50MHz).....\$849  
PAGESTREAM 2.1.....\$164  
PANASONIC 1410 CAMERA.....\$179  
PROFESSIONAL PAGE 2.0.....\$215  
PRO VIDEO GOLD.....\$129  
PRO VIDEO POST.....\$139  
PROWRITE 3.1.....\$89  
SCALA.....\$257  
SCULPT ANIMATE 4D.....\$289  
SHARP JX 100 COLOR SCANNER  
w/SOFTWARE & CABLES.....\$645  
TURBO SILVER 3.0.....\$58  
WORDPERFECT (AMIGA).....\$155  
XETEC CD ROM CDD-650E EXTERNAL.....\$649

**BODEGA BAY**  
By CALIFORNIA ACCESS



EXPANSION CONSOLE  
Turn your A-500 into a  
A-2000 Compatible **NOW AVAILABLE**

**CALL**

CHINON INTERNAL DRIVE for A-2000.....\$79  
COLOR SPLITTER.....\$105  
DAKOTA SKETCHMASTER 12x12.....\$369  
DAKOTA SKETCHMASTER 12x18.....\$569  
DIGITAL CREATIONS DCTV.....\$369  
DIGIVIEW GOLD v.4.0.....\$114  
EXCELLENCE 2.0.....\$105  
EXPANSION SYSTEMS  
Heavy Duty Power Supply for A-500.....\$79  
FLICKER FIXER.....\$229  
FLICKER FIXER PAL.....\$269  
FLICKER FIXER GENLOCK OPTION.....\$39  
FLICKER FIXER DEB 2000.....\$89  
FRAMEGRABBER.....\$419  
FRAMEGRABBER 256.....\$499

## MONITORS

NEC MULTISYNC IILD.....\$589 SEIKO 1440.....\$509  
NEC MULTISYNC IILDS.....\$609 SEIKO 1445.....\$579  
SONY 1304 MULTISYNC.....\$649 SEIKO 1450.....\$629

## AMIGA 500 EXPANSION KIT

SUPRA RAM 500 512K RAM EXPANSION with CLOCK,  
CALENDAR and MASTER 3A-1 EXTERNAL DRIVE

**\$119**



**AMIGA 2000**

1MB EXPANDABLE TO 9MB BUILT-IN 3.5"  
DISK DRIVE SYSTEM SOFTWARE

**\$1199**

AMIGA 2000HD.....\$1499 AMIGA 2500/500.....\$2749

AMIGA 2500/100.....\$3229

**AMIGA 3000**

ALL MODELS AVAILABLE **\$2299**  
Starting as low as

**AMIGA 500 & AMIGA 2000  
COMPATIBLE HARD DRIVE PKGS.**  
MIX 'N MATCH THESE SCSI CONTROLLERS & HARD  
DRIVES TO FIT THE RIGHT PACKAGE FOR YOU!

### A-500 SCSI CONTROLLERS

DATAFLYER 500.....\$125  
RAPID ACCESS TURBO A-500.....\$229  
TRUMPCARD 500.....\$159  
TRUMPCARD 500 PRO.....\$229  
XETEC FASTTRACK A-500.....\$219

### A-1000 SCSI CONTROLLERS

XETEC FASTTRACK A-1000.....\$299

### A-2000 SCSI CONTROLLERS

ADSCSI 2080.....\$159  
CA MALIBU BOARD 2000.....\$109  
DATAFLYER 2000.....\$85  
GVP SERIES II HCA-2000.....\$149  
GVP SERIES II HCA-2000.....\$195  
RAPID ACCESS TURBO A-2000.....\$229  
SUPRA WORDSYNC.....\$99  
TRUMPCARD 2000.....\$99  
TRUMPCARD 2000 PRO.....\$135

### HARD DRIVES

SEAGATE ST-157N-1 (49MB).....\$215  
SEAGATE ST-1096N (80MB, 3.5").....\$325  
QUANTUM 52MB (LOW PROFILE).....\$235  
QUANTUM 105MB (LOW PROFILE).....\$379  
QUANTUM 170MB.....\$619  
QUANTUM 210MB.....\$699

**NEW  
COMMODORE  
CD-TV**

### PRINTERS PANASONIC

KXP-1180.....\$159.95  
KXP-1123.....\$234.95  
KXP-1124L.....\$299.95  
KXP-1624.....\$369.95  
KXP-1654.....\$599.95

### STAR

NX-1001.....\$149.95  
NX-1020 R.....\$189.95  
NX-2420.....\$279.00  
NX-2420 R.....\$299.00  
Color Option Kits.....CALL

### CITIZEN

GSX-140.....\$275.95  
GSX-145.....\$385.95  
Wide Carriage.....\$159.95  
200GX.....\$159.95  
Color Option Kits.....CALL

### CANON

BUBBLEJET BJ300.....\$499 BUBBLEJET BJ330.....\$679

### HEWLETT PACKARD

DESKJET 500.....\$499  
LASERJET IIP w/Toner.....\$899  
LASERJET IIP w/Toner.....\$1099  
COMMODORE MPS 1270 INK-JET.....\$139

## GVP

GVP RAM 8/2 A-2000  
(2MB EXP. to 8MB).....\$175

### NEW SERIES II

A-2000 22MHz/1MB exp. to 13MB/68882.....CALL FOR  
A-2000 33MHz/4MB exp. to 16MB/68882. LOW PRICE  
CALL FOR LOW, LOW PRICES  
SCSI HARD DRIVE PACKAGES AVAILABLE

GVP 3050 Kit (50 MHz)  
w/68030, 4MB exp. to 32MB, 68882.....\$2159  
GVP 3050 KIT w/QUANTUM 40MB.....ADD \$300  
GVP 3050 KIT w/QUANTUM 80MB.....ADD \$500  
GVP 3050 KIT w/MAXTOR 210MB.....ADD \$950  
GVP A-500HD 8+0/52Q.....\$554  
A-500 HD 8+0/105Q.....\$804  
RICOH 50MB Removable w/Cartridge.....\$759

### VIDEO PACKAGE

PANASONIC PV-1410 VIDEO CAMERA COMPLETE w/ 16mm  
LENS + COPYSTAND w/ LIGHTS + DIGIVIEW GOLD 4.0  
w/FIXED LENS.....\$309 w/VARIABLE LENS.....\$339

## Supra

### 500XP HARD DRIVE KITS

512K, 20MB.....\$349 512K, 80MB.....\$559  
512K, 52MB.....\$475 512K, 105MB.....\$655  
2MB, 20MB.....\$459 2MB, 80MB.....\$639  
2MB, 52MB.....\$499 2MB, 105MB.....\$715  
2MB, 52MB (1MBx4).....\$555 2MB, 105MB (1MBx4).....\$725  
2MB THRU 8MB VERSIONS AVAILABLE

### SUPRA RAM 600RX 128 1MB

512K EXPANDABLE TO 8MB-PASS THRU BUS

SUPRA 2400 SUPRA 2400 PLUS  
EXTERNAL MODEM w/MNP5, V.42, b1, b6  
w/CABLE.....\$99 SUPRA 2400 ZI PLUS.....\$159  
INTERNAL MODEM \$114 SUPRA 9600  
SUPRA 2400 MNP.....\$145 PLUS.....\$549  
SUPRA 3.5" EXTERNAL DRIVE.....\$98

### SUPRA RAM 2000

OK.....\$105 4MB.....\$235 8MB.....\$369  
2MB.....\$169 6MB.....\$299

### SUPRA RAM 500 512K

Expansion for A-500 **\$47**

FOR CUSTOMER SERVICE or ORDER STATUS CALL: (718) 965-9285  
CUSTOMER SERVICE HOURS: MON-THURS 9am-5pm/FRI 9am-4pm/SUN 10am-4pm



## NO SURCHARGE FOR CREDIT CARD ORDERS

WE INVITE CORPORATE AND EDUCATIONAL CUSTOMERS. DISCOUNTS  
FOR QUANTITY ORDERS. RUSH, 2nd DAY & NEXT DAY AIR SERVICE AVAILABLE.  
CUSTOMER TOLL FREE TECHNICAL SUPPORT

Certified check, Bank Check, Money Order, Approved P.O.s, Visa, Mastercard, Amex, Optima, Diners  
Club, Carte Blanche, COD's & Wire Transfers accepted. Please call before submitting P.O.s. Non-  
certified checks must wait 2-4 weeks for clearance. Prices and availability subject to change without  
notice. Not responsible for typographic errors. Return of defective merchandise must have prior  
return authorization number or returns will not be accepted. Shipping & Handling additional. Second  
Day & Next Day Air available at extra cost. Canadian orders please call for shipping rates. APO FPO  
orders please add 10% shipping & handling - min. \$15 (Over \$1200-8%, Over \$3000-6%). All APO FPO  
orders are shipped first class priority air. Oversized shipments may be levied a surcharge. All orders  
can be shipped air express. Call for details. We check for credit card theft. DCA #800233. Amiga is a  
registered trademark of Commodore Amiga, Inc.



# FREE Product Info From .info!

To receive free information from participating advertisers in this issue:

Circle the reader service numbers on the card below of the advertisers which interest you.

Fill in your name and address where indicated.

Attach the proper postage and drop it in the mail.

**READER SERVICE CARD #44 is valid until January 31, 1992. ONE**

Fill out this card carefully. You may check more than one answer to the questions at right. PLEASE PRINT.

Mr.

Ms.

Name \_\_\_\_\_

Company \_\_\_\_\_

Title \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

(\_\_\_\_\_) \_\_\_\_\_ (\_\_\_\_\_) \_\_\_\_\_  
Phone Fax

A. Which type of Amiga do you own?

- 1 ☐ Amiga 500 4 ☐ Amiga 2500  
2 ☐ Amiga 1000 5 ☐ Amiga 3000  
3 ☐ Amiga 2000 6 ☐ None

B. Which of the following software products are you likely to purchase within the next year?

- 7 ☐ Desktop Publishing  
8 ☐ Wordprocessing  
9 ☐ Video  
10 ☐ Graphics/Animation  
11 ☐ Sound/Music  
12 ☐ Productivity  
13 ☐ UNIX  
14 ☐ Entertainment  
15 ☐ Educational

C. Which of the following hardware products are you likely to purchase within the next year?

- 16 ☐ Mass Storage 19 ☐ Video Hardware  
17 ☐ Accelerators 20 ☐ Monitors  
18 ☐ Printers 21 ☐ Other

D. What applications are your primary interests?

- 22 ☐ Desktop Publishing  
23 ☐ Wordprocessing  
24 ☐ Video  
25 ☐ Graphics/Animation  
26 ☐ Sound/Music  
27 ☐ Productivity  
28 ☐ On-line Services  
29 ☐ UNIX  
30 ☐ Entertainment  
31 ☐ Educational

E. How did you receive this copy of .info?

- 32 ☐ Subscription  
33 ☐ Newsstand  
34 ☐ Borrowed  
35 ☐ Library, etc.

101 106 111 116 121  
102 107 112 117 122  
103 108 113 118 123  
104 109 114 119 124  
105 110 115 120 125

151 156 161 166 171  
152 157 162 167 172  
153 158 163 168 173  
154 159 164 169 174  
155 160 165 170 175

201 206 211 216 221  
202 207 212 217 222  
203 208 213 218 223  
204 209 214 219 224  
205 210 215 220 225

251 256 261 266 271  
252 257 262 267 272  
253 258 263 268 273  
254 259 264 269 274  
255 260 265 270 275

301 306 311 316 321  
302 307 312 317 322  
303 308 313 318 323  
304 309 314 319 324  
305 310 315 320 325

126 131 136 141 146  
127 132 137 142 147  
128 133 138 143 148  
129 134 139 144 149  
130 135 140 145 150

176 181 186 191 196  
177 182 187 192 197  
178 183 188 193 198  
179 184 189 194 199  
180 185 190 195 200

226 231 236 241 246  
227 232 237 242 247  
228 233 238 243 248  
229 234 239 244 249  
230 235 240 245 250

276 281 286 291 296  
277 282 287 292 297  
278 283 288 293 298  
279 284 289 294 299  
280 285 290 295 300

326 331 336 341 346  
327 332 337 342 347  
328 333 338 343 348  
329 334 339 344 349  
330 335 340 345 350



## SUBSCRIPTIONS

11 Iss.	22 Iss.	33 Iss.
<b>1 Year</b> only	<b>2 Years</b> only	<b>3 Years</b> only
<b>\$26<sup>00</sup></b>	<b>\$47<sup>50</sup></b>	<b>\$65<sup>00</sup></b>
<b>you save</b> <b>40%</b>	<b>you save</b> <b>45%</b>	<b>you save</b> <b>50%</b>

Canada/Mexico: add \$8.00 per year  
Foreign: add \$24.00 per year

Card # or payment MUST accompany order. We do not bill.

## BACK ISSUES

**\$5.50 EACH (\$6.50 outside USA)**

CIRCLE THE ISSUES YOU WOULD LIKE:

10 11 12 13 14 15 17 18  
19 20 22 23 24 25 26 27  
28 29 30 31 32 33 34 35  
36 37 38 39 40 41 42 43  
44

(note: issues #10-31 cover Amiga & C64.  
issues #32 on are Amiga-only.)

SUBSCRIPTION \$ \_\_\_\_\_

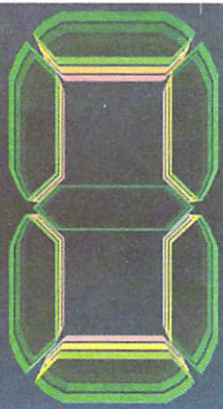
BACK ISSUES \$ \_\_\_\_\_

**TOTAL \$**

**Prizes Galore!**

in the  
**.info Give-away**

see page  
34 for  
details



U.S. funds only! Credit card, check, or money order only. Make payable to: .info

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY/STATE/ZIP \_\_\_\_\_

☐ NEW ☐ RENEWAL (Attach your .info mailing label)

VISA \_\_\_\_\_ Mastercard \_\_\_\_\_ expiration date \_\_\_\_\_

Signature: \_\_\_\_\_ Card # \_\_\_\_\_

**ORDER NOW BY**



**PHONE!**  
with



**VISA or MASTERCARD**

**1-800-373-0703**



\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please  
Attach  
Postage  
Here



Reader Service Management Department  
PO Box 5195  
Pittsfield, MA 01203 - 5195



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS PERMIT NO 171 IOWA CITY, IA.

POSTAGE WILL BE PAID BY ADDRESSEE

**.info** Subscriptions  
705 Highway 1 West  
Iowa City, IA 52246 - 4221  
USA





Let those who have understanding reckon the power of the

# FUSION-FORTU

## MEGA-STEROID ACCELERATION FOR THE AMIGA 2000

### Performance :

- Motorola MC68040 microprocessor at 25Mhz.
- 18 - 25 MIPS, 3.5 - 8.0 MFLOPS
- 32-Bit RAM

### Quality and reliability :

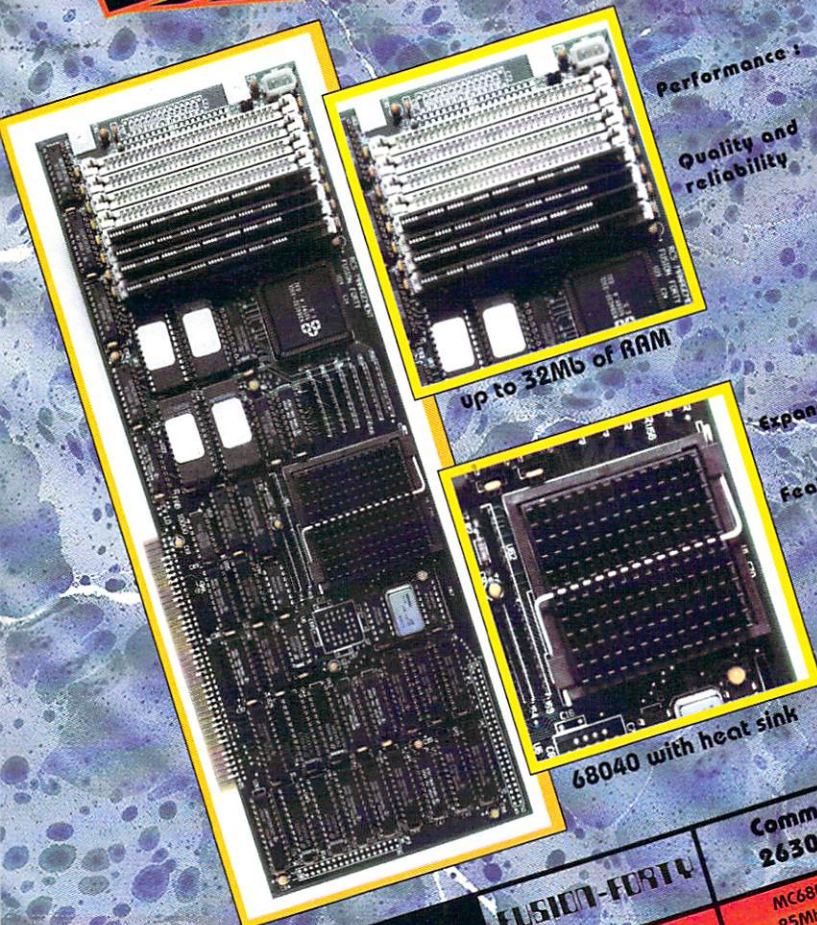
- 6-layer board with separate ground and power planes for uniform voltage stability.
- extensive use of decoupling devices.
- minimizes electrical noise.
- high-performance clock for the tight electrical specifications of the MC68040.
- heat sink to dissipate heat generated by the MC68040.

### Expandability :

- memory available in 4 Mb, 16Mb and 32Mb configurations.
- hardware select switch to disable accelerator board and run original processor.

### Features :

- asynchronous design for Genlock compatibility.
- user object code compatibility with all earlier Motorola 68000 series microprocessors.
- compatible with Videotoaster, Imagine and other software.
- one year warranty.



	FUSION-FORTU	Commodore 2630	GVP R3001	IBM i486
Processor	MC68040	MC68030	MC68030	i80486
Clock Speed	25Mhz	25Mhz	25Mhz	25Mhz
Mips	20+	5.8 +	6.4 +	15
MFLOPS	3.5+	Less than 1	Less than 1	1.
Cache Sizes	4Kbytes x 2	256bytes x 2	256bytes x 2	8kbytes
Burst Memory(32bit) on board	Yes	NO	YES	yes
	4M Standard Max 32 M	2M Standard Max 4 M	(Needs DaughterBoard)	



RCS Management Inc.  
120 McGill Street, Montreal, Quebec  
Canada, H2Y 2E5

Tel: (514) 871-4924  
Fax: (514) 871-4926

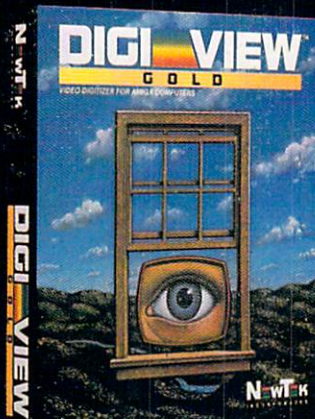
FUSION-FORTU is a registered trademark of RCS Management. Other brand and product names are trademarks of their respective holders.

Circle #170 on the Reader Service Card



# THE AMIGA MULTI-MEDIA TASK FORCE

## DIGI-VIEW GOLD



NOW WORKS WITH  
THE AMIGA 3000

**\$99.95**

### The Best Digitizer Keeps Getting Better

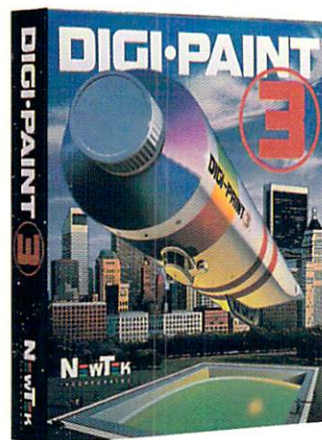
Digi-View Gold is the most award winning, best selling, most used Amiga hardware product of all time. Simply focus your camera on any object or picture and in seconds Digi-View Gold turns it into Amiga graphics that glow with vibrant colors and stunning clarity. Only the new Digi-View 4.0 offers Dynamic HiRes (4096 colors in high resolution), advanced image processing, and powerful graphics tools never before available. Images can be modified and enhanced with Digi-Paint 3 and easily displayed with Elan Performer. AmigaWorld Magazine says, "Digi-View is the best value in Amiga digitizers and delivers the best images."

**\$199.95**

### The Most Successful HAM Paint Program Of All Time

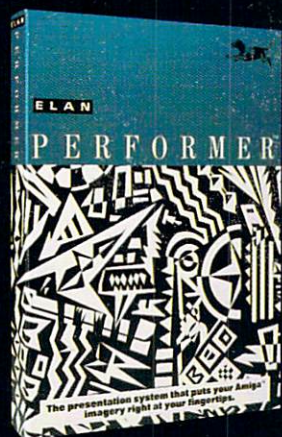
NewTek pioneered 4096 color painting on the Amiga. With Digi-Paint 3 we enter the next generation of advanced HAM painting. Powerful features such as Rub-Thru, Colorize, Variable Transparency, and Warping put Digi-Paint 3 in a class by itself. Don't be fooled by HAM newcomers, only Digi-Paint 3 has the speed, ease-of-use, high-quality HAM display, and direct Digi-View interface that make it the best paint program for your Amiga. In a head-to-head paint showdown AmigaWorld found a clear winner: "If you are really serious about owning only one paint program, we would have to recommend Digi-Paint 3."

## DIGI-PAINT 3



**\$99.95**

## ELAN PERFORMER 2.0



NOW AVAILABLE  
EXCLUSIVELY FROM  
NEWTEK.

### The Hottest Presentation Graphics Tool Ever For The Amiga

Before Elan Design joined the NewTek Video Toaster design team they created Elan Performer 2.0. Now available exclusively from NewTek, Performer brings high-end presentation power to the Amiga. Performer is the power tool Digi-View and Digi-Paint users have been waiting for. Now you can easily combine your images in presentations that spring to life with animation and excitement. Whether you're doing presentations, video, multi-media or animation, Performer will make your graphics the star of the show. AmigaWorld says, "Elan Performer is a flawless performer."

Digi-View Gold, Digi-Paint 3, and Elan Performer are available now at your local Amiga dealer or call 1-800-843-8934 or 913-354-1146.

Digi-View Gold, Digi-Paint 3, Dynamic HiRes and Video Toaster are trademarks of NewTek Inc. Dynamic HiRes requires 2 megs of RAM. Amiga is a trademark of Commodore-Amiga, Inc. Elan Performer is a trademark of Elan Design.

Circle #130 on the Reader Service Card

**NewTek**  
INCORPORATED